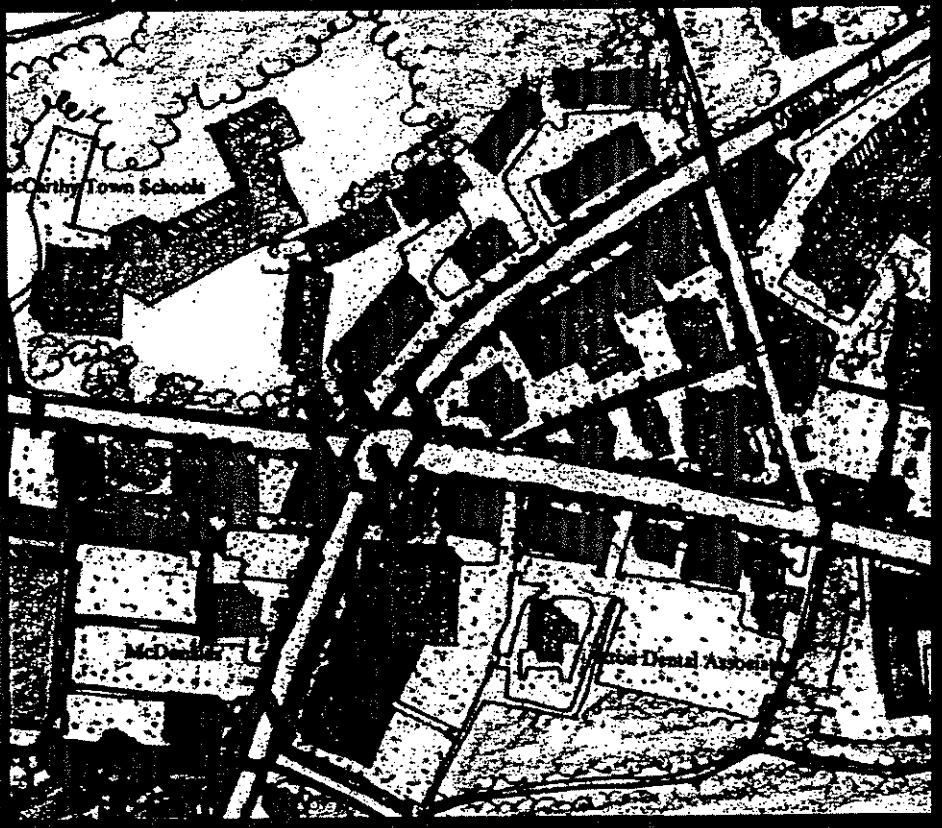
KELLEY'S CORNER



SPECIFIC AREA PLAN

Prepared by

Kelley's Corner Planning Committee • Acton Planning Department

Consulting Assistance Provided by

The LandUse Collaborative

In Association With

[illegible] • Cambridge Economic Research

Mark Bobrowski, Esq.

June 1995

EXECUTIVE SUMMARY

This document presents a plan for the long-term development of Kelley's Corner and the surrounding areas. The plan focuses on land use and regulatory changes that are designed to promote appropriate economic growth in Kelley's Corner and in several nearby locations along Route 2. It also addresses strategies for managing the impacts of development, including traffic and pedestrian circulation and wastewater generation; evaluates alternative mechanisms and strategies for promoting economic development; and outlines the issues that will need to be taken into account if the Town wishes to adopt an impact fee system to finance infrastructure.

GOALS AND OBJECTIVES

Through the public participation process and its own discussions, the Kelley's Corner Planning Committee drafted a set of goals and objectives to guide the preparation of the Specific Area Plan. These goals and objectives represent a balancing of the Planning Committee's economic development mission with town and neighborhood concerns regarding aesthetics and traffic. Goals and objectives were identified in five areas:

- Economic Development Goal:
  Accommodate and encourage commercial and industrial development that serves the needs of the Town of Acton and its residents.

- Aesthetics and Town Character Goal:
  Ensure that new development and redevelopment reflects and reinforces the character of Acton.

- Circulation and Traffic Goal:
  Provide for safe and efficient circulation throughout the Kelley's Corner Planning Area.

- Wastewater Management Goal:
  Provide adequate wastewater treatment capacity for existing and planned development.

- Environmental Protection Goal:
  Protect the area's natural resources.

LAND USE PLAN

The Kelley's Corner planning process resulted in the following land use strategies for the Planning Area:

- In Kelley's Corner proper—that is, the existing retail area surrounding the intersection of Main Street and Massachusetts Avenue—the plan recommends that permitted land use

intensities be increased as an incentive to upgrading and infill, and as a way to leverage private funds for infrastructure improvements.

- New development or redevelopment that takes advantage of the increased development potential should be designed to enhance the visual appearance of the shopping district, and should be oriented to improve pedestrian circulation and access.

- The isolated single-family residential district on Main Street between Hosmer House and the Redstone condominium development is designated for multifamily development. This will relieve any pressure for converting these properties to commercial use and, by adding residents close to the business district, will also support the objective of creating a walkable shopping area.

- No land use changes are proposed for the residentially zoned areas south of the business district (Prospect Street, Main Street and several neighborhood streets), or for the Acton Shopping Center area (Donelan's, etc.).

- An increase in permitted development intensity is recommended for the Office Park district along the south side of Route 2 between Piper Road and Hosmer Street. This area contains the Concord Auto Auction site, the Concordian Motel, and two light industrial parcels (Modular and Data Instruments). As in the retail center, it is hoped that this change will encourage additional development that can support the costs of needed public infrastructure, such as roadway improvements and community wastewater treatment.

- A large residentially zoned parcel on the westerly side of Piper Road is proposed for rezoning to Office Park use, consistent with the Modular and Data Instruments sites on the opposite side of the street. The purposes of this proposed rezoning are to minimize land use and traffic conflicts by achieving compatible uses on both sides of Piper Road, to reduce the residential build-out in this area, and to expand the commercial/industrial tax base.

- The Plan recommends accommodating a proposed 90,000 square foot expansion of the Haartz Auto Fabrics facility by rezoning a portion of the Haartz site that is currently zoned for residences. This will reduce the potential residential build-out in this area.

REGULATORY RECOMMENDATIONS

The regulatory recommendations of the Specific Area Plan flow directly from the strategies presented in the previous section.

- The maximum permissible floor area ratio (FAR) in the Kelley's Corner retail center (i.e., the area currently within the Kelley's Corner zoning district) should be increased from the current level of 0.20 to a new level of 0.40, subject to site and design review (through a special permit process) in order to ensure consistency with municipal goals and objectives.

- Clear design standards should be established for the Kelley's Corner district, to encourage a higher quality of design and the evolution of an environment that is better oriented to pedestrian circulation. The principles embodied in these standards should include the promotion of shared parking facilities, the establishment and expansion of walkways and bikeways to connect activity areas within the Planning Area, the use of appropriate building materials, the siting of buildings close to the street, and the use of landscaping to screen commercial parking areas from the street and from nearby residential areas.

- The existing multifamily residential district on the northwest side of Main Street should be extended to include the adjacent single-family residences, and the permissible residential density should be increased from 5 dwelling units per acre to 15 dwelling units per acre (which is the current density of the Redstone condominiums).

- The existing Office Park 2 (OP2) district located between Hosmer Street and Piper Road (comprising the Concord Auto Auction, the Concordian Motel, and the Data Instruments and Modular facilities on Discovery Way) should be rezoned to a new Office Park 3 district, within which the maximum FAR could be increased from 0.20 to 0.30 through a special permit process.

- The residentially-zoned portion of the Haartz Auto Fabrics property should be rezoned to the General Industrial district, consistent with the rest of the site, provided that an adequate buffer is maintained between the uses on the site and the nearby residences on Charter Road.

CIRCULATION

Without an extensive study of traffic in the Kelley's Corner area it is not possible to determine how much of the existing traffic is locally-generated, and how much is through traffic using Routes 27 and 111 for longer journeys. Therefore, no direct projection can be made of the increases in volume resulting from additional development in the Planning Area. However, the increased level of overall development envisioned in this Plan will inevitably result in some level of increased traffic, and the Circulation component presents strategies for addressing both existing traffic conditions and future traffic growth:

- *Regional access* is currently provided by connections to Route 2 from Main Street and Massachusetts Avenue, with more local connections at Taylor/Piper Road and Hosmer Street. There does not appear to be a need for an additional interchange as far as Kelley"s Corner is concerned, but any significant change in access connections could impact through traffic in Kelley's Corner.

- With respect to *local access*, the Plan recommends consideration of a frontage road system along Route 2 with a connecting overpass to provide adequate access to existing and new development between Piper Road and Hosmer Street and to the transfer station. A more

modest local access recommendation is to formalize the "cut-through" between Main Street and Massachusetts Avenue next to the Acton Plaza shopping center.

- A number of *roadway capacity and safety* improvements are recommended. These are divided into three groups: development management policies (including zoning); safety and operational improvements at several intersections (Route 2 at Taylor Road/Piper Road; the intersection of Hayward Road and Main Street; and the Main Street/Prospect Street intersection), and capacity improvements at the intersection of Massachusetts Avenue and Main Street, and at the Route 2 ramps on Main Street.

- The Plan also recommends a comprehensive set of *pedestrian and bicycle enhancements*, including improvement of existing sidewalks and crosswalks, and creation of new walkway and bicycle connections within and between development parcels and to key open space areas in and adjacent to the Planning Area.

WASTEWATER IMPACTS

Like traffic and circulation, wastewater management will be an issue in the Kelley's Corner Planning Area regardless of how much growth occurs.

- Until recently, the total costs of relying on individual septic systems for wastewater disposal have been hidden. However, this is being changed by the State's new Title 5 regulations for inspection and repair of septic systems, which have already had an impact in Acton and across Massachusetts. It is quite possible that the cost of constructing and managing community wastewater treatment systems will begin to compare favorably with the cumulative costs—in terms of maintenance and repair, depressed real estate markets, and environmental protection—of hundreds of individual systems.

- Homes and businesses in the Kelley's Corner area have a septic system failure rate that is higher than average for Acton. Hence, the impacts of the new Title 5 regulations—and the potential benefits of moving to community wastewater treatment—are likely to be greater here than in other areas of the Town.

- Under existing zoning, the volume of wastewater that could be produced in the Planning Area at build-out is estimated to be about 40% greater than at present. This volume would be increased by an additional 50% if the recommended land use strategy is adopted and full build-out occurs.

- Moving toward community wastewater treatment systems does not necessarily mean constructing large-scale facilities to serve the entire town. In the case of the Kelley's Corner area, needed capacity might be provided by using several smaller facilities to serve groups of users. For example, the school campus may be best served by a small on-site system, rather than by being linked to a larger system for the retail and office centers.

- Potential locations for wastewater treatment facilities have been identified at the Concord Auto Auction site and on the Piper Road site that is proposed for rezoning from residential to Office Park.

- The report contains preliminary estimates of the costs of treatment facilities, and suggestions for financing these costs through a combination of general obligation bonds (paid for by all Acton taxpayers) and assessments to individual users of the facilities.

ECONOMIC BASE ANALYSIS AND MARKET STUDIES

The findings and conclusions of our economic base analysis and real estate market studies are the following:

- Economically, Acton is in very good shape. The town has emerged from the last recession with over 500 more jobs and nearly 150 more firms than it had a decade ago. By 2000, employment in the town is projected to increase by 1,800 at which time it should total around 11,300. Over half of the job gains are expected to be in office-based and R&D-intensive activities.

- Acton has a very high proportion of jobs in larger manufacturing establishments and a low proportion of jobs in smaller personal, business, and financial services firms. Although this makes the town vulnerable to potential further job losses in manufacturing, it also indicates good growth prospects for services.

- The commercial real estate market reflects the town's general economic upturn. Class A office, R&D, and industrial space, which faced vacancy rates of around 40% in 1990 is now 97% occupied. This provides a sharp contrast with the 495 North Market area, where commercial vacancy rates are pushing 30%.

- Due to the high level of commercial vacancy in the wider market area, speculative commercial construction has come to a standstill since 1988. However, the owner-built market in Acton has been lively, averaging an annual absorption of 13 acres a year. This rate of absorption is expected to remain steady throughout the remainder of the decade.

- From the standpoint of market feasibility, the following uses offer the best near-term prospects for reuse of large, key sites in Kelley's Corner:

    - large, "box" retailing uses
    - owner-built office and R&D flex space
    - a Continuing Care retirement center

  In addition, investment in incremental improvements and piecemeal redevelopment of existing retail properties is expected to continue throughout the decade.

- Other uses offer longer term prospects for the district. By 2000, excess space in the market area is expected to be absorbed creating a demand for additional:

    - village retailing (e.g., small retail and service units)
    - speculative office park construction
    - an upscale hotel/conference center with community access to recreational facilities on a membership basis.

- Acton does not need to undertake a large-scale economic development effort. Rather, administratively simple and cost-effective measures, such as density bonuses and short-term tax abatements, should be offered as incentives for incremental upgrading in Kelley's Corner. A part-time staff member should be assigned to coordinate the process.

FISCAL IMPACTS

The recommended land use plan will have two types of fiscal impacts to the Town: increased revenues from property taxes, and increased costs for providing municipal services and facilities.

- The long-term fiscal benefits of encouraging commercial and industrial development are not clear. Although the correlation between tax rates and land use patterns is weak, it appears that Massachusetts communities with higher proportions of nonresidential development may also have higher residential tax rates. This may be attributable to higher infrastructure needs in more urbanized communities.

- In the short term, however, an expansion of the nonresidential tax base has clear fiscal benefits. Given Acton's current distribution of land uses and its property tax structure, it is estimated that residential parcels generate about $1.40 in municipal service costs for every dollar of tax revenue that they produce, whereas the cost of providing services to commercial and industrial parcels is less than 20 cents for every dollar of tax revenue generated. These and similar estimates present a strong case for expanding the commercial and industrial tax base to help fund needed municipal services while minimizing the tax burden on Acton homeowners.

- Based on an estimated floor area increase of about 337,000 square feet over a ten-year period, the total nonresidential tax base in the Planning Area could increase by about $14.2 million and annual property tax revenues by about $291,000. After accounting for municipal service costs attributable to this new development, the estimated net fiscal benefit to the Town would be $232,800 per year at the end of the ten-year development period.

IMPACT FEES

The final section of the report presents an outline of an impact fee system that might be implemented to help fund infrastructure improvements in the planning area or in other areas of the Town. This outline includes a review of the legal authority for Towns to adopt impact fee measures; a review of the key court decisions, both in Massachusetts and elsewhere, relating to such fees; and an overview of how impact fees are being used in communities across the country. Specific attention is paid to the use of impact fees to fund roads and sewers, as these are the major capital improvement needs that are anticipated for the Kelley's Corner Planning Area. Key points from this outline include the following:

- An impact fee is a fee charged to a developer to pay for capital improvements that are required by the development. It cannot be used to pay for the portion of capital improvement costs attributable to pre-existing demand, nor is it used to help fund ongoing operating costs.

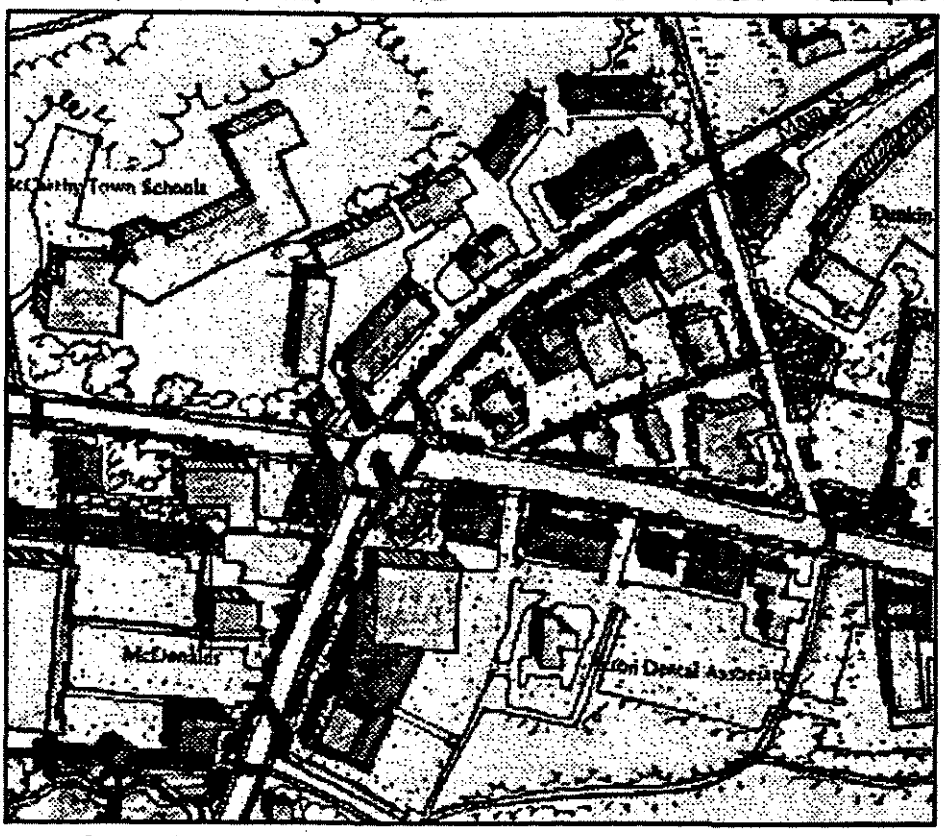
- An impact fee by-law or ordinance must be supported by a capital facilities plan, including cost estimates and an inventory of deficiencies in existing capital facilities.

- The impact fee system must include a formula or methodology to determine the proportion of the capital facility need caused by the new development, and this methodology must yield a fee that is "roughly proportional" to the demand created by the development.

- Funds received from impact fees should be earmarked to a zone or district to ensure that the paying development benefits from their expenditure, and they must be spent for earmarked purposes within a reasonable period of time or be returned to the payer.

This project was funded by a Strategic Planning Grant awarded by the Commonwealth of Massachusetts, Executive Office of Communities and Development.

KELLEY'S CORNER



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INTRODUCTION

Kelley's Corner is a commercial center surrounding the intersection of Main Street (Route 27) and Massachusetts Avenue (Route 111) in the Town of Acton, Massachusetts. Acton's 1991 Master Plan identified Kelley's Corner as one of two "main community business areas to serve the Town and surrounding communities" and as "the most appropriate area in Acton to locate businesses and retail stores with regional attraction." The Master Plan recommended that a separate Kelley's Corner zoning district be established "in recognition of the importance of the continued vitality of the commercial activity in this area," and that a specific planning effort for Kelley's Corner "be undertaken to address traffic, aesthetic, and other problems in this area." More recently, the Town has proposed that the Metropolitan Area Planning Council (MAPC) consider the Kelley's Corner area for designation as a "Concentrated Development Center," which would give the area priority recommendation for state and federal infrastructure investments.

Following the Master Plan's recommendation, in 1994 the Town initiated a planning effort for Kelley's Corner, building on its successful experience in two previous neighborhood planning projects (West Acton and South Acton). A Kelley's Corner Planning Committee was established, including representatives of the Planning Board, Board of Selectmen, School Committee, Chamber of Commerce, property owners, residents and Town staff. The following Mission Statement was defined for the Planning Committee's work:

> The mission of the Kelley's Corner Planning Committee is to develop a comprehensive growth and development plan for Kelley's Corner which will facilitate concentrated economic growth that creates an attractive center and helps to generate revenue for the Town. This plan also must address issues of pedestrian and vehicular safety, access and circulation, waste water treatment and other environmental impacts. To consider the needs and desires of various town constituencies, input of the business community, neighborhood residents, and other Acton residents must be sought and incorporated into the plan whenever possible.

The Town engaged a consulting team to assist in the facilitation of the community participation process and the preparation of the Specific Area Plan. The consulting team consisted of: The LandUse Collaborative (lead consultant); TAMS Consultants, Inc. (circulation and urban design); Cambridge Economic Research (economic development); and Mark Bobrowski, Esq. (legal issues of impact fees).

This document and attachments contain the Specific Area Plan for the Kelley's Corner Planning Area prepared by this consulting team. In addition, as part of the planning process, the Acton Planning Department produced a detailed *Inventory and Analysis* report. This report is included as an Appendix to the Specific Area Plan.

1. GOALS AND OBJECTIVES

This Specific Area Plan is guided by Goals and Objectives developed during the planning process as a result of Planning Committee deliberation and citizen input at the January public forum and March design workshop. These Goals and Objectives represent a balancing of the Planning Committee's economic development mission with town and neighborhood concerns regarding aesthetics and traffic.

In addition, the Planning Committee identified potential actions to implement several of the Goals and Objectives. These Goals and Objectives, together with the applicable potential actions, are as follows:

ECONOMIC DEVELOPMENT

1. ACCOMMODATE AND ENCOURAGE COMMERCIAL AND INDUSTRIAL DEVELOPMENT THAT SERVES THE NEEDS OF THE TOWN OF ACTON AND ITS RESIDENTS

Functional Objectives

- Optimize the nonresidential tax base
- Encourage diversity of services compatible with the needs of Acton

Objectives by Subarea

- Hosmer Street to Piper Road — Encourage new nonresidential and nonretail uses that will broaden the Town's tax base, consistent with infrastructure capacity and sensitive to abutting neighborhoods; and discourage further residential development.
- Kelley's Corner Retail Core — Encourage the continuation of the existing mix of retail, service, office and residential uses; and support moderate expansion of commercial activity consistent with infrastructure capacity.
- Hayward Road Industrial Area — Permit a moderate expansion of the existing industrial use accompanied by a reduction in residential build-out.
- Acton Shopping Center Area — Maintain the existing level and character of retail uses.

AESTHETICS AND TOWN CHARACTER

2. ENSURE THAT NEW DEVELOPMENT AND REDEVELOPMENT REFLECTS AND REINFORCES THE CHARACTER OF ACTON

- Encourage consistency in building and area design to be compatible with Acton's New England heritage

Potential actions to implement this objective:

- Establish a design review process
- Create standards for building design, to develop a theme for the area
- Create standards for landscape design, to develop a theme for the area

- Transform Kelley's Corner into a visually appealing center that reflects the character of Acton

Potential actions to implement this objective:

- Create attractive natural buffers to screen, divide and reduce the visual impact of paved parking areas
- Create an attractive focal point/landmark that identifies Kelley's Corner
- Develop alternative parking options
- Improve on trash receptacles and disposal

- Create or encourage indoor and outdoor gathering places

Potential actions to implement this objective:

- Create parks
- Encourage establishments that provide opportunities for socializing for all ages
- Encourage development and redevelopment to incorporate informal spaces for social interaction

- Maintain the integrity of the surrounding residential areas

- Maintain the scenic character of the Route 2 corridor

CIRCULATION AND TRAFFIC

3. PROVIDE FOR SAFE AND EFFICIENT CIRCULATION THROUGHOUT THE KELLEY'S CORNER PLANNING AREA

- Provide safe and efficient traffic flow within the Planning Area

Potential actions to implement this objective:

- Improve major intersections along the arterial highways
- Reduce curb cuts

- Improve safe access to and across Route 2

- Create and improve safe pedestrian and bicycle access

Potential actions to implement this objective:

- Provide an appealing network of sidewalks and bike ways
- Improve on the safety of crosswalks

WASTEWATER MANAGEMENT

4. PROVIDE ADEQUATE WASTEWATER TREATMENT CAPACITY FOR EXISTING AND PLANNED DEVELOPMENT

- Develop a strategy to address the existing sewage problems
- Ensure that adequate treatment capacity exists to serve new growth

Potential actions to implement this objective:

- Provide an infrastructure to support the disposal of sewage
- Identify areas for common sewage disposal

ENVIRONMENTAL PROTECTION

5. PROTECT THE AREA'S NATURAL RESOURCES

- Retain natural spaces as buffers and for passive recreation

2. LAND USE PLAN

The proposed land use plan for the Kelley's Corner Planning Area flows from the Goals and Objectives developed during the public participation phase of the project. Based on general goals identified early in the process, the final goals and objectives were tested during the planning design workshop and further refined through discussions with the Planning Committee, Planning Department staff, and consultants. This section outlines the land use planning recommendations for each of the four subareas which have evolved from that process.

PLANNING SUBAREAS

The name "Kelley's Corner" generally refers to the cluster of retail and service businesses surrounding the intersection of Main Street (Route 27) and Massachusetts Avenue (Route 111). The Kelley's Corner Planning Area extends beyond the immediate Kelley's Corner business area to include several surrounding areas that could affect, or be affected by, development in the core area. Several subareas of the Planning Area have been defined for purposes of description and analysis:

- *Subarea A* is the Kelley's Corner commercial core. It includes the Kelley's Corner zoning district, two multifamily residential complexes, and several single-family residences on the northwest side of Main Street.

- *Subarea B* includes the residential neighborhoods along Prospect and Main Streets to the south of the Kelley's Corner business district, extending to the shopping center at the intersection of Prospect and Main Streets.

- *Subarea C* extends east along Route 2 from the intersection of Massachusetts Avenue to the Concord Auto Auction site at Hosmer Street.

- *Subarea D* comprises the regional school campus on Charter Road between Massachusetts Avenue and Hayward Road, and an industrial area along Hayward Road to the northwest of the business area.

The Inventory and Analysis Report (Appendix) contains Planning Area maps, including the four Subareas.

HOSMER STREET TO PIPER ROAD (SUBAREA C)

This Plan treats the area from the Auto Auction site and motel on Hosmer Street to the large residentially-zoned parcel on the west side of Piper Road (opposite Discovery Way) as a unit. Because of its location and the existing established light industrial uses on Discovery Way, this area is suitable for large-scale, employment-generating uses. However, such uses must be

sensitive to the residential neighborhoods to the south, and development must be able to support the costs of needed infrastructure.

OBJECTIVES

The economic development objective for this subarea is as follows:

> *Encourage new nonresidential and nonretail uses that will broaden the Town's tax base, consistent with infrastructure capacity and sensitive to abutting neighborhoods; and discourage further residential development.*

Land use options for this area include:

- Offices
- Light Industrial
- Research And Development
- Hotel/Conference Center
- Continuing Care Facility
- Commercial Recreation
- Restaurant
- Park and Ride

In addition, this area provides potential locations for sewage treatment facilities to serve the immediate and surrounding areas: i.e., the Hosmer St./Piper Rd. industrial area, the rest of the Kelley's Corner Planning Area, and nearby residential neighborhoods. Two possible locations for such a facility have been identified:

- The Auto Auction site on Route 2 and Hosmer Street contains sufficient area to accommodate both a treatment facility and a significant office or commercial development. The advantage of this site is that it is currently available for commercial redevelopment, and the Town has an opportunity to encourage a coordinated plan for reuse that would incorporate a treatment facility through negotiation with a prospective user.

- The residentially-zoned parcel on the west side of Piper Road apparently contains good soils to absorb treated wastewater. This site is closer to the center of the Kelley's Corner district, and therefore might offer cost savings for construction of a collection system.

Uses which were deemed unacceptable to the Planning Committee and area residents include those which would have a negative effect on Town finances (because the new property tax revenues generated would not cover the increased costs of providing municipal services), and those with excessive adverse impacts on nearby neighborhoods. The fiscal criterion excludes all residential uses (including multifamily residential) and noncommercial recreation (e.g., town playing fields, nonprofit facilities); while retail uses (especially large-scale ones such as shopping centers and superstores) are vigorously opposed by residents because of expected traffic, noise, lighting and aesthetic impacts, and because of the impacts on existing business areas in Acton.

ISSUES

The major issues in this area concern access between businesses and Route 2, as well as access across Route 2 for residents and public safety vehicles. The existing Piper Road crossing is dangerous because of its configuration and its proximity to the Route 111 merge, and it is important that state planning provide a replacement crossing to accommodate the needs of businesses and residents. At the same time, the impacts of additional traffic on local residential roads must be considered. These issues are addressed in the Transportation and Circulation element of the Plan.

Another set of issues relates to the preservation and enhancement of open space areas in connection with development and redevelopment of this area. Residents are concerned to maintain and improve access to Clear View Pond and a greenway along Cole's Brook, and trails and bikeways connecting this area from Hosmer Street through to the Great Hill conservation area and the Kelley's Corner retail area would also be desirable.

RECOMMENDED LAND USE STRATEGY

Two significant land use policy changes are proposed for this area. The first involves shifting the Piper Road parcel from the Residential 2 (R2) district to the Office Park 2 (OP2) district. This parcel is currently the only major undeveloped residentially-zoned area in the Planning Area. Rezoning the site would change its potential buildout from 37 dwelling units (i.e., an increase of 36 units) to approximately 150,000 square feet of office/R&D/industrial floor area.[1] (For comparison, Data Instruments and Modular each have about 100,000 square feet of floor area).

A second change from existing conditions is an increase in permissible development intensity in this area, in cases where development impacts can be mitigated. The Planning Committee specifically voted in favor of granting FAR increases as an incentive to make infrastructure improvements. Accordingly, we propose a new "OP3" district, within which the maximum FAR of 0.20 would remain, but with the option to exceed this limit up to a maximum FAR of 0.30 through a special permit process, in return for developer provision of specific public infrastructure improvements and mitigation of off-site impacts. This increase in FAR is reflected in the traffic and wastewater generation analyses incorporated in this report; however, it is important to emphasize that the build-out increase would only be available through the special permit process, in which the Town would have the ability to shape the development and ensure that off-site impacts such as traffic are adequately mitigated.

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[1]Note: Although the estimated development potential for this parcel is 37 units, it should be noted that a preliminary subdivision plan filed for the parcel shows only 14 house lots.

It is also recommended that the OP3 provisions include a provision to allow net density on a site to be increased in cases where the owner dedicates a portion of the site to a public purpose. One example of how this provision might be applied is a situation where a portion of a developable parcel might be required for use for a wastewater treatment facility. In such a case, regardless of the amount of land that is ultimately available for development, the buildout of the site would be based on the applicable FAR applied to the total land area. This provision could aid in negotiations with a property owner.

The following table lists the site areas, existing development, and potential development for the seven parcels in this area:

Site	Total Area (acres)	Developable Site Area (acres)	Existing Floor Area (sq. ft.)	Buildout Floor Area @ FAR of 0.20	Buildout Floor Area @ FAR of 0.30
G-3/65 (Piper Road)	27.48	17.21	(house)	149,934	224,901
G-3/70A (Modular)	11.71	11.42	105,975	105,975	149,237
G-3/71 (Data Instruments)	14.48	14.17	105,754	123,449	185,174
G-3/71-1	2.50	2.50	0	21,780	32,670
G-4/194A (Auto Auction)	65.49	47.97	43,041	417,915	626,872
G-4/195 (Motel)	3.61	3.61	17,235	31,450	47,175
TOTAL	125.27	96.88	272,005	850,503	1,266,029

As the table shows, under existing zoning there is little expansion potential on the developed parcels, but the two major undeveloped parcels (the residential parcel on Piper Road and the Auto Auction site) can support a total of nearly 525,000 square feet under existing zoning. The proposed strategy would increase the maximum potential development on these sites by an additional 284,000 square feet, and would also permit moderate expansion on other developed sites in this subarea. [Note: The Kelley's Corner database was assembled from the existing Assessors database by combining some parcels that are in common use and ownership, and splitting some parcels that have different characteristics; therefore, the data reported in this will not correspond in all cases to data maintained for other purposes.]

KELLEY'S CORNER RETAIL CENTER (SUBAREA A)

This area extends from K-Mart on the south and west to Route 2 on the north and east. It is bounded by the school campus on the northwest, and by the Great Hill conservation area on the southeast.

OBJECTIVES

The economic development planning objective for this subarea is as follows:

Encourage the continuation of the existing mix of retail, service, office and residential uses; and support moderate expansion of commercial activity consistent with infrastructure capacity.

ISSUES

The principal issues for this area identified by residents in the public participation process are the visual appearance of the commercial development and the traffic safety and congestion problems resulting from the combination of multiple driveways and inadequate definition of vehicular and pedestrian circulation areas. There is a sense that additional development could be accommodated if it led to an environment that was more friendly to pedestrians, and that reflected Acton's traditional New England character better than does the current commercial "strip" development.

On the other hand, there is a recognition of the limitations facing property owners. Many of the parcels are close to their maximum buildout under the existing zoning, and several exceed the FAR limit of 0.20. Without the ability to expand there is little financial incentive to reconfigure their sites and buildings. Furthermore, without a public wastewater collection and treatment system, many lots are at their maximum feasible build-out, regardless of zoning. Therefore, in order to achieve the type of commercial area that residents say they want, the zoning must be changed to provide the incentive of additional income potential, i.e., increased floor area.

The question then becomes what level of density is appropriate. Several of the most significant properties have FAR's well in excess of 0.20. Prominent examples include:[2]

Parcel	FAR
Acton Plaza, Massachusetts Ave. side (Roche Brothers, Ames, etc.)	0.292
K-Mart (including McDonald's)	0.247
Bowladrome	0.279
Shawmut Bank building	0.368

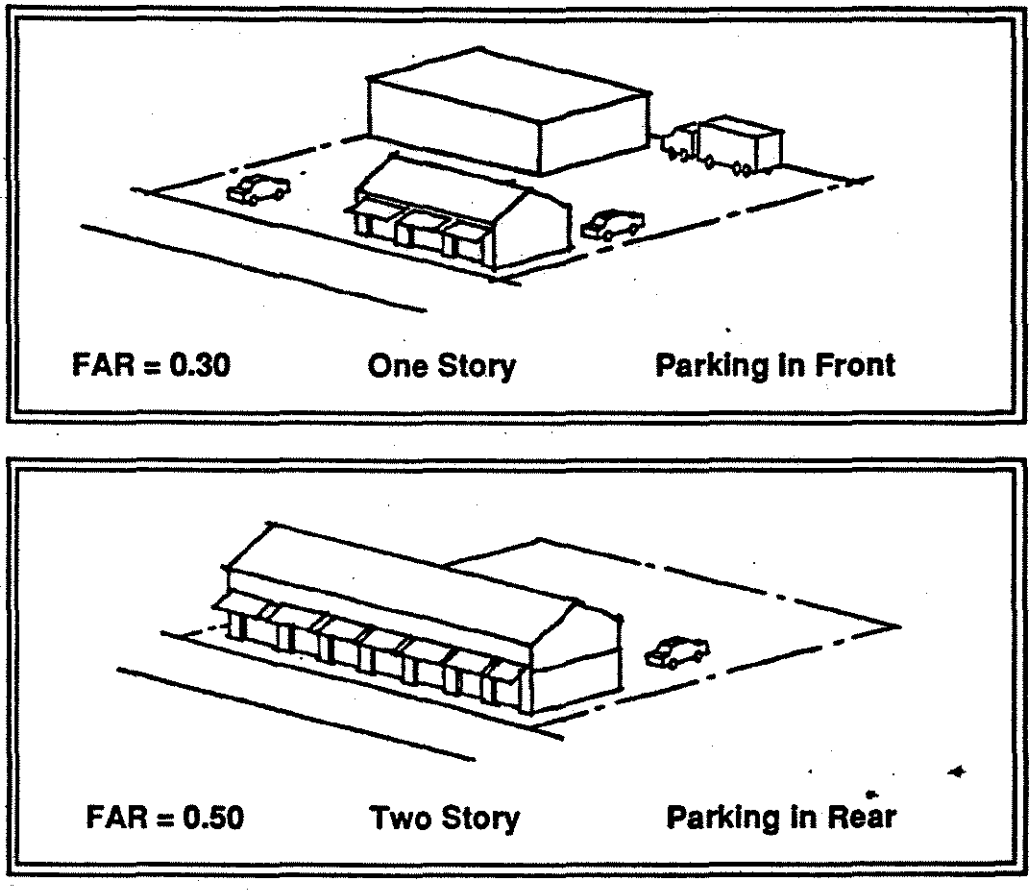
Based on this review, we have concluded that in order to provide any significant incentive for property upgrading and redevelopment, the permissible FAR would have to be increased to a minimum of 0.35 and preferably higher. Without such an incentive, it is extremely unlikely that any action by the Town can be successful in transforming the appearance of Kelley's Corner.

In addition, evolving "new urbanism" theory and practice suggests that densities of at least this level are essential to create a pedestrian-oriented commercial center. For example, Peter

[2]Also note that the Acton Shopping Center (Donelan's, etc.) – outside this subarea – has an FAR of 0.228.

Calthorpe[3] recommends that retail uses served by surface parking lots have a minimum FAR of 0.30, that offices have a minimum FAR of 0.35, and that "higher than minimum FARs are strongly encouraged" for both types of uses. Figure 1, from Calthorpe's book, *The Next American Metropolis*, illustrates how a relatively high floor area ratio, combined with requirements that principal buildings be located along the street frontage, leads to a more pedestrian-friendly environment than a lower-density suburban FAR without careful site design standards.

Figure 1
Floor Area Ratio and Pedestrian Orientation



From Peter Calthorpe, *The Next American Metropolis*

This Plan, therefore, recommends that the allowable FAR be increased to 0.40 for the Kelley's Corner zoning district, contingent on meeting new standards for building siting and design, and location of parking areas.[4] As in the Hosmer Street–Piper Road area, the increased density

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[3]Peter Calthorpe, *The Next American Metropolis: Ecology, Community and the American Dream*, New York: Princeton Architectural Press, 1993; p. 78.

[4]It is not clear whether or not this increased FAR will be sufficient to encourage a significant amount of new growth. In the absence of public parking facilities in the area, the need to provide off-street parking is likely to continue to be a constraint on development, and parking decks are not likely to be supportable at an FAR of

allowance is a way for the Town to provide an incentive to upgrade and redevelop commercial properties, and to leverage private investment in needed infrastructure.

At the same time, the protection of adjacent residential neighborhoods in the Kelley Road area and along Prospect Street and Massachusetts Avenue is essential to the acceptability of any redevelopment or expansion of commercial properties. For this reason, increases in FAR above 0.20 (or above the existing FAR, if greater than 0.20) must be tied to site development standards that require buildings to be located at the front of lots, with building heights scaled down at the perimeter of the business district.

RECOMMENDED LAND USE STRATEGY

In general, the use zoning for this area (including the office area at the junction of Routes 2 and 111) is to remain the same. Uses to be allowed here include retail, office, services and residential (although little residential expansion is envisioned). The principal zoning changes will relate to development intensity and site development standards.

As discussed above, it is recommended that the maximum FAR for the Kelley's Corner district be increased to at least 0.40. In order to address the aesthetic issues in this area, the revised zoning should include a requirement for design review for any new development, and for any redevelopment exceeding the base floor area ratio of 0.20. Clear design standards should be established for the Kelley's Corner district, to encourage a higher quality of design and the evolution of an environment that is better oriented to pedestrian circulation. The principles embodied in these standards should include the promotion of shared parking facilities, the establishment and expansion of walkways and bikeways to connect activity areas within the Planning Area, the use of appropriate building materials, the siting of buildings close to the street, and the use of landscaping to screen commercial parking areas from the street and from nearby residential areas.

Although the Planning Committee expressed reservations about increasing the intensity of development in the southeast quadrant of the Kelley's Corner district (Acton Dental Associates, Goodyear, Bowladrome) because of proximity to the Kelley Road residential area, we recommend that these parcels be included in the same overall zoning framework as the rest of the district. Traffic access to businesses along Route 27 has been cited as a primary concern of area residents; and traffic circulation benefits to the retail area might be gained through the development of a shared parking area in this quadrant and consolidation of the existing multiple access points. Redevelopment of the existing businesses can be guided by standards that direct development away from residential areas and screen the neighborhood from noise and light impacts.

0.40. In discussing this, however, the Planning Committee did not feel comfortable recommending a higher FAR (e.g., 0.50) for the Kelley's Corner area.

On the northwest side of Main Street (Route 27), between the Redstone condominiums and the Hosmer House, there are three single-family homes, zoned for single residential use. It is recommended that these be rezoned for multifamily use at a similar density to the Planning Area's two existing multifamily developments. This would be consistent with the adjoining condominiums and would strengthen a residential presence in Kelley's Corner that would support its desired role as one of Acton's "village" centers. Redstone and Colonial Village have an average density of 14.7 units per acre; therefore, the recommended zoning for these parcels would permit 30 dwelling units on a total of 1.9 acres.

The *Composite Build-out and Circulation Plan* on the following page illustrates these land use proposals, along with circulation and urban design concepts that might be incorporated in individual development proposals. The plan indicates how new buildings, or expansions of existing ones, could be sited so as to define the street edge more clearly than at present. These buildings also help to screen the parking areas from the street. A system of pedestrian pathways and crosswalks adds further structure to the business area, connecting the various businesses with each other, with the adjacent open space areas, and with the school campus.

HAYWARD ROAD INDUSTRIAL AREA (SUBAREA D)

OBJECTIVES

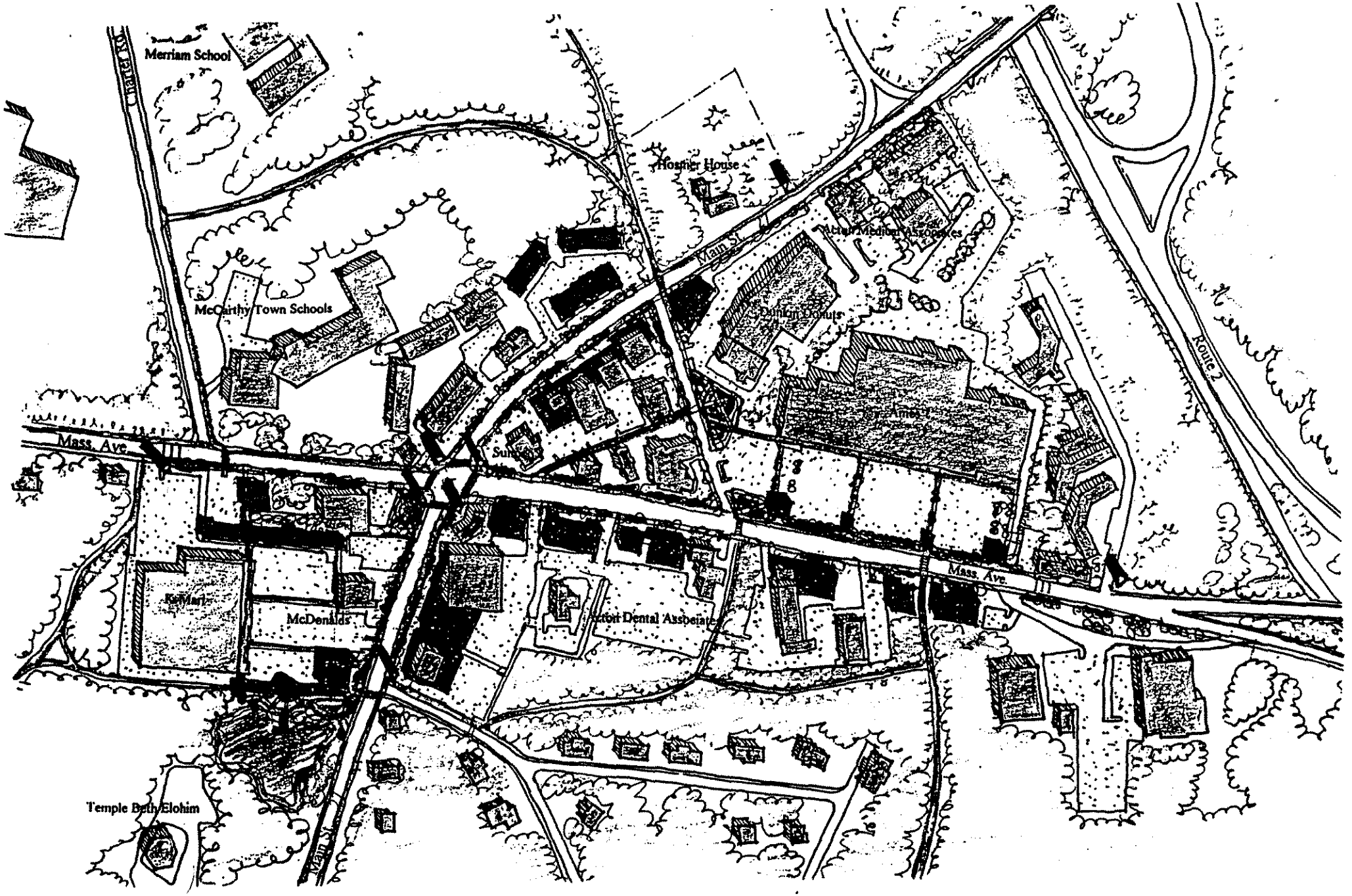
The planning objective for this subarea is as follows:

> *Permit a moderate expansion of the existing industrial use accompanied by a reduction in residential build-out.*

ISSUES

Haartz Auto Fabrics wishes to build a 90,000 square foot expansion to its existing facility on Hayward Road. A portion of the Haartz property is currently zoned for residential use, and therefore this proposed expansion in industrial space could be counterbalanced by a reduction in the potential for residential growth. The Planning Committee supports Haartz's proposed expansion because it would help to maintain a diversified tax base in Acton, and because it would further the Town's goals of providing for industrial growth in areas of existing industrial activity rather than promoting industrial sprawl.

There are some existing traffic issues on Hayward Road in this area that need to be addressed. The two primary areas of concern are at the intersection of Hayward Road and Main Street and at the school entrance. Both locations should be improved even under existing traffic conditions. The Main Street intersection poses a problem for both trucks and cars because of the sharp angle of the intersection in spite of recent improvements. The series of driveways at the school and adjacent day care center are confusing and create numerous conflicts of turning vehicles:



KELLEY'S CORNER
Business District
Composite Build-out and Circulation Plan

TAMS 5/24/95

Key:

- Existing Buildings
- New Buildings
- Pathways and Crosswalks
- Kelley's Corner Gateway Pylons
- Parking Areas
- Pocket Parks

consideration should be given to consolidating these driveways and creating a clear main entrance to the school campus regardless of what happens at the Haartz site.

The proposed Haartz expansion would generate increased traffic along Hayward Road and thereby add to the existing traffic concerns. The Circulation Component chapter addresses these issues.

RECOMMENDED LAND USE STRATEGY

There are two ways that zoning could be changed to accommodate this proposed expansion: (1) the maximum FAR applicable to the existing GI-zoned area could be increased from 0.20 to about 0.32; or (2) 16.6 acres of residentially-zoned land owned by Haartz adjacent to the existing facility could be rezoned to the GI district. The latter option was chosen for several reasons:

(a) It does not raise the issue of special FAR treatment for one property owner;

(b) Haartz is willing to donate the rezoned area to the Town or place a conservation restriction on it, in order to provide a permanent buffer for the neighboring residences;

(c) The impacts of increased industrial use will be at least partially offset by the reduction in potential residential buildout (currently the residentially-zoned parcel can support 30 single family homes); and

(d) This option optimizes the fiscal benefit to the Town (at least in the short term).

Thus, the net impact of this proposed change is the difference between an increase of 90,000 square feet of manufacturing space and a decrease of 30 (potential) single-family homes.[5]

ACTON SHOPPING CENTER (DONELAN'S) AREA (SUBAREA B)

OBJECTIVES

The planning objective for this subarea is as follows:

Maintain the existing level and character of retail uses.

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[5]Note that rezoning the entire R2-zoned area to the GI district has the effect of increasing the potential floor area by 132,000 square feet if this area is considered separately from the area currently zoned GI – this figure is reflected in the build-out summaries at the end of this report. However, considering all parts of the Haartz property as a unit, the maximum increase would be 88,528 square feet. The actual increase that would be permitted by the recommended rezoning may depend on the specifics of the existing lot divisions.

ISSUES

The Acton Shopping Center has an existing FAR of 0.228 (i.e., above the zoning limit of 0.20). This area was cited by residents and Planning Committee members as one which provides needed services in a pleasant environment. No change was determined to be necessary.

RECOMMENDED LAND USE STRATEGY

No regulatory change is proposed for this area.

POTENTIAL GROWTH UNDER PROPOSED LAND USE PLAN

The following table presents a summary of the changes in total development that would be possible as a result of implementing the proposed land use plan. The greatest change from existing conditions—under either the existing zoning or the proposed zoning—could occur in Subarea C (the Hosmer Street–Piper Road area), through new development on the Auto Auction and Piper Road sites and expansion of the Modular and Data Instrument facilities. In the central retail area (Subarea A), there is the potential for a 35% increase in commercial floor area under existing zoning, and a further 71% growth if the recommended zoning changes are implemented. Subarea D would see a modest increase in development as a result of the rezoning of the Haartz property. Subarea B (Donelan's, etc.) will have very little growth under either scenario.

	SUBAREAS				Planning
	A	B	C	D	Area Total
Existing					
Single-family dwellings	8	51	3	1	63
Multi-family dwellings	69	0	0	0	69
Nonresidential floor area (sq. ft.)	381,100	60,000	272,000	739,100	1,452,300
Build-out - existing zoning					
Single-family dwellings	6	95	55	32	188
Multi-family dwellings	69	0	0	0	69
Nonresidential floor area (sq. ft.)	516,600	61,900	700,600	748,100	2,027,200
Build-out - proposed scenario					
Single-family dwellings	6	95	18	2	121
Multi-family dwellings	96	0	0	0	96
Nonresidential floor area (sq. ft.)	884,200	61,900	1,266,000	880,100	3,092,200

3. REGULATORY ACTION RECOMMENDATIONS

This section outlines the regulatory actions necessary to implement the recommendations of the Specific Area Plan.

HOSMER STREET TO PIPER ROAD

NEW ZONING DISTRICT

Create a new "Office Park 3" zoning district with the following provisions:

- Allowed uses as in the current OP2 district, with the following changes:
    - Restaurants: Change from N (prohibited) to SPS (permitted by Special Permit from the Board of Selectmen) with site plan review;
    - Recreation (Commercial): Change from N (prohibited) to SPS (permitted by Special Permit from the Board of Selectmen) with site plan review;
    - Prohibit Planned Unit Developments.
- Intensity regulations: maximum FAR of 0.20 by right, with increase to 0.30 by special permit subject to specific findings and contribution of off-site public improvements.
- Special provisions:
    - Developments with FARs over 0.20 must demonstrate mitigation of off-site impacts (in particular, traffic impacts).
    - Developments with FARs over 0.20 must provide public benefits corresponding to a schedule incorporated in the Zoning Bylaw. Examples could include defined ratios of additional floor area (in excess of the amount at an FAR of 0.20) to public open space/parks, linear feet of new roadway, or wastewater treatment capacity.

      This approach has recently been adopted by the Towns of Framingham and Natick for the "Golden Triangle" area on Route 9, where a "bonus density" provision allows developments to exceed a floor area ratio of 0.32 up to a maximum of 0.40, according to the following schedule:[6]

[6]As an example of how the bonus schedule is applied, each square foot of service road provided by the developer (and approved in advance by the Planning Board, as well as any other permitting agencies) would qualify the development for an additional 3 square feet of floor area above the by-right FAR of 0.32, up to a maximum of 0.40.

Public Benefit Amenity	Amenity Unit	Bonus Ratio*
Open Space Amenities		
Park	Square foot	1:1
Excess Pervious Landscaping	Square foot	1:0.5
Pedestrian Circulation Improvements		
Off-Site Sidewalk	Square foot	1:1
Pathway/Bikeway	Square foot	1:1
Pedestrian Bridge/Tunnel	Square foot	1:1
Public Assembly Space	Square foot	1:5
Traffic Improvements		
Service Road (24-30 foot paved width)	Square foot	1:3
Transit Amenities		
Transit-related Lane Widening	Square foot	1:2
Public Transit Endowment	Dollar ($)	20:1

*Note: Bonus Ratio = Amenity Unit : Floor Area

Note that the above table is presented as an example only, and not as a recommendation for the types of improvements or amenities that might be appropriate for Acton.

- The area of a parcel dedicated to a public use required or approved as a condition of a special permit (e.g., wastewater treatment, roadway improvements) will be included in the computation of total area and/or developable site area (as appropriate) for the purpose of calculating permissible floor area ratio on the parcel after dedication.

REZONE PIPER ROAD PARCEL

Rezone parcel G3/65 on Piper Road (27.5 acres) from current Residence 2 to the new Office Park 3 district.

KELLEY'S CORNER RETAIL CENTER

COMMERCIAL DEVELOPMENT STANDARDS

The development regulations for the Kelley's Corner zoning district should be amended to provide incentives to encourage infill and redevelopment that upgrades existing developed sites. The underlying design objective is to define the streetscape more clearly. The regulatory strategy for the Kelley's Corner retail area, therefore, involves a set of changes affecting the intensity and dimensional regulations, as well as new provisions relating building height and

intensity to location on the lot. The outline of this strategy is to replace the existing maximum FAR of 0.20 with a tiered system:

- The maximum FAR would remain at 0.20 for buildings where a majority of the floor area is located more than 100 feet from the street line.

- Within the first 100 feet of depth, the FAR could be as high as 1.00 for buildings with two or more stories, or 0.50 for buildings with one story (subject to the overall 0.40 limit).

These provisions, combined with the Town's off-street parking requirements, will tend to encourage multi-story, mixed-use buildings rather than single-story, single-use ones. For a single-user retail building, the Zoning Bylaw requires the provision of one parking space per 300 square feet of net floor area and the maintenance 35% of the lot as open space. These standards limit a single-story retail building with surface parking to an FAR of 0.25 regardless of a specific FAR requirement. However, by reducing the footprint of the building and adding office space on the second story, the FAR could be increased to 0.29; and a three-story building containing two floors of offices could reach an FAR of 0.31 without having to use structured parking.

Furthermore, for buildings that contain two or more retailers, the Town's off-street parking requirement is reduced to 3 spaces per 1,000 square feet of floor area, and it is further reduced in the West Acton Village district to 70 percent of the otherwise applicable requirement (e.g., to only 2.1 spaces per 1,000 square feet for buildings with two or more retail businesses). Using these standards, the attainable FAR with surface parking would increase to 0.40 for a two-story building and to 0.46 for a three-story building.

The objectives of defining the street line and creating an environment that is more pedestrian-friendly could be further advanced by establishing additional requirements for achieving FAR's higher than 0.35, for example:

> At least 50 percent of the street frontage shall be occupied by a building that is at least two stories in height, is set back no more than 35 feet from the street line, and contains on its first floor retail or service businesses with public entrances on the street side.

The build-out summary table at the end of Section 2 indicates that the FAR increase will permit an additional 370,000 square feet of development in Subarea A above the build-out under current zoning. However, existing parcel configurations are likely to constrain this figure to a lower amount (a detailed analysis of each site's development potential would be required to determine the potential build-out more precisely). While the total amount of additional growth permitted by these regulatory changes will probably be moderate, the overall effect should create a more pedestrian-friendly, "village"-like atmosphere.

DESIGN STANDARDS

Improving the aesthetics of Kelley's Corner is an important goal of the Specific Area Plan. Design concepts that have emerged from the planning process include the following:

- the promotion of shared parking facilities, rather than individual parking lots, in order to improve traffic flow by reducing the number of turning movements from public streets;
- the establishment and expansion of walkways and bikeways to connect activity areas within the Planning Area;
- the use of appropriate building materials that reflect the character of the Town and avoid a "commercial strip" look;
- the siting of buildings close to the street in order to facilitate pedestrian access and to screen parking areas, and
- the use of landscaping to screen commercial parking areas from the street and from nearby residential areas.

To promote good public and private design in the Planning Area, the Town should adopt design standards that will be applied during the site plan approval process. Many towns have adopted design review processes that are either advisory to a permit-granting authority, or mandatory as part of the development approval process. In some cases, such as in Brookline and Wellesley, general policies and principles have been defined with broad discretion for interpreting and applying these standards given to a development review board composed of design and real estate professionals. Elsewhere, the design standards are quite specific: a case in point is Nantucket Island, which has defined detailed standards covering everything from site planning to building colors and shutters.[7]

Acton could set up a procedure with design standards that apply to any new development or redevelopment within the Kelley's Corner district that exceeds a specified threshold. If the threshold relates to a transition from as-right development to a requirement for a special permit, the design standards could be applied as part of the special permit process.

To the extent that these standards are related to the Plan's objectives and can be clearly defined and unambiguously interpreted, they can be made mandatory: for example, a requirement for a minimum or maximum building height or setback. More subjective issues such as color and materials should be advisory.

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[7] J. Christopher Lang and Kate Stout, *Building with Nantucket in Mind: Guidelines for Protecting the Historic Architecture and Landscape of Nantucket Island*, Nantucket Historic District Commission, 1992.

The following are some examples of design standards, adapted from bylaws and ordinances that have been adopted by other jurisdictions:[8]

General Design Principles [San Bernardino]:

A. Desirable Elements of Project Design

The qualities and design elements for commercial structures that are most desirable include:

1. *Richness of surface and texture*
2. *Significant wall articulation (insets, canopies, wing walls, trellises)*
3. *Multi-planed, pitched roofs*
4. *Regular or traditional window rhythm*
6. *Articulated mass and bulk*
7. *Significant landscape and hardscape elements*
8. *Prominent access driveways*
9. *Landscaped and screened parking*
10. *Comprehensive sign program*

B. Undesirable Elements

The elements to avoid or minimize include:

1. *Large blank, unarticulated stucco wall surfaces*
2. *Unpainted concrete precision block walls*
3. *Highly reflective surfaces*
4. *Metal siding on the main facade*
5. *Plastic siding*
6. *Square "boxlike" structures*
7. *Mix of unrelated styles (e.g., rustic wood shingles and polished chrome)*
8. *Large, out of scale signs with flashy colors*

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[8]The sources of the sample design standards are indicated as follows:

[Sacramento] *Transit-Oriented Development Design Guidelines–Final Public Review Draft*, Prepared by Calthorpe Associates in association with Mintier & Assoociates for Sacramento County Planning & Community Development Department, September 1990.

[San Bernardino] *City of San Bernardino Development Code*, Prepared by Jacobsen & Wack and Urban Design Studio, May 1991.

[Nelessen] A. Nelessen, *Visions for a New American Dream*, Chicago: Planners Press, 1994.

[Georgetown] *Georgetown, Colorado, General Standards for All Areas—Historic, Transition, and Meadows*, in *Aesthetics and Land-Use Controls: Beyond Ecology and Economics*, American Planning Association, Planning Advisory Report No. 399.

9. *Visible outdoor storage, loading and equipment areas*
10. *Disjointed parking areas and confusing circulation patterns*

Design Considerations [San Bernardino]:

The proposed development shall be of a quality and character which is consistent with community design goals and policies including but not limited to scale, height, bulk, materials, cohesiveness, colors, roof pitch, roof eaves and the preservation of privacy.

Architectural Design Guidelines [San Bernardino]:

Large buildings which give the appearance of "box-like" structures are generally unattractive and detract from the overall scale of most buildings. There are several ways to reduce the appearance of large scale, bulky structure.

1. *Vary the planes of the exterior walls in depth and/or direction. Wall planes should not run in one continuous direction for more than 50 feet without an offset.*

2. *Vary the height of the buildings so that it appears to be divided into distinct massing elements.*

3. *Articulate the different parts of a building's facade by use of color, arrangement of facade elements, or a change in materials.*

4. *Use landscaping and architectural detailing at the ground level to lessen the impact of an otherwise bulky building.*

5. *Avoid blank walls at the ground floor levels. Utilize windows, trellises, wall articulation, arcades, change in materials, or other features.*

6. *All structure elevations should be architecturally treated.*

Commercial Building Entries [Sacramento]:

- *Primary ground floor commercial entrances must be oriented to a public or private street, or to pedestrian plazas or parks, not to interior blocks or parking lots.*

- *Secondary entries from the interior of a block will be allowed.*

- ***Grocery stores and similar anchor retail buildings (above 30,000 square feet) may have their entries from off-street parking lots; however, pedestrian access to the entry must be provided from the street such that pedestrians are not required to walk through the parking lot to enter the store. On-street entries are strongly encouraged.***

- *Buildings with multiple retail tenants should have numerous entries to the street; small single entry malls will be discouraged.*

Building Facades [Sacramento]:

- *Building facades should be varied and articulated to provide visual interest to pedestrians. Street level windows and numerous building entries are required in the core commercial area. Arcades, porches, bays and balconies are encouraged. In no case shall the facade of a building consist of an unarticulated blank wall or an unbroken series of garage doors.*

    - *Facades should vary from one building to the next, rather than create an overly unified frontage.*

    - *Along walls without entries, building elevations must include windows, display areas, and/or be lined with small retail shops.*

    - *Anchor retail tenants should be encouraged to add small-scale retail uses on building frontages with no entries.*

- *Building materials should convey durability and permanence, and should be suitable to Acton's climate.*

    - *Building materials such as concrete, masonry, tile, stone, and wood should be encouraged; glass curtain walls and all reflective glass will be discouraged.*

Building Facades [Nelessen]:

- *Blank, windowless walls are discouraged. Where the construction of a blank wall is necessitated by local building codes, the wall should be articulated by the provision of blank window openings trimmed with frames, sills, and lintels, or, if the building is occupied by a commercial use, by using recessed or projected display window cases. Intensive landscaping may also be appropriate in certain cases.*

- *Storefronts are an integral part of a building and shall be integrally designed with the upper floors to be compatible with the overall facade character.*

- *Ground floor retail, service, and restaurant uses shall have large pane display windows. Such windows shall be framed by the surrounding wall and shall not exceed 75 percent of the total ground level facade area.*

- *Buildings with multiple storefronts shall be unified through the use of architecturally compatible materials, colors, details, awnings, signage and lighting fixtures.*

Building Design [Georgetown]:

- *Vertical and Horizontal Emphasis—The vertical and horizontal appearance of a structure is created by its proportions, scale, and door and window openings. Buildings should be of a vertical or nondirectional appearance.*

- *Roof Form—The design line created by the shape of the roof shall constitute the roof form. In general, low gable, shed-vaulted, domed, free-form, A-frame, and geometric shape roofs will be deemed inappropriate. Shed roofs may be used for small additions. All roofs should have appropriate overhangs.*

- *Wall Materials—The use of natural materials is favored. Imitation or synthetic materials, such as aluminum or vinyl siding, imitation brick or stone, or plastic, will generally be deemed inappropriate. Any use of these materials will require specific approval on a case-by-case basis by the Design Review Committee.*

Parking Lots [Sacramento]:

- *Parking lots should not dominate the frontage of streets or interrupt pedestrian routes.*

- *Parking lots should be located behind buildings or in the interior of a block, whenever possible.*

    - *Where parking is provided in front of the building, there shall be no more than one bay of parking separating the building from the street. Major anchor retail stores (e.g., more than 30,000 square feet) may have deeper parking lots.*

- *In no case shall surface parking lots occupy more than 1/3 (33 percent) of the frontage of a street.*

- *The size of any single surface parking lot shall be limited to 2.5 acres, unless divided by a street or building.*

    - *If a single use will require a surface parking lot in excess of two acres, structured parking should be strongly encouraged.*

    - *Retail uses should be encouraged on the first floor of street-side edges of parking structures.*

Architectural Design Standards and Guidelines [Nelessen]:

- *The architectural treatment of the front facade shall be continued, in its major features, around all visibly exposed sides of the building. All sides of a building*

shall be architecturally designed to be consistent with regard to style, materials, colors, and details.

- *Gable roofs with a minimum pitch of 9/12 should be used to the greatest extent possible. Where hipped roofs are used, it is recommended that the minimum pitch be 6/12. Both gable and hipped roofs should provide overhanging eaves on all sides, that extend a minimum of one foot beyond the building wall.*

- *Flat roofs should be avoided on one story buildings and are recommended on buildings with a minimum of two stories, provided that all visibly exposed walls have an articulated cornice that projects horizontally from the vertical building wall plane. Mansard roofs are generally discouraged, particularly on buildings less than three stories in height. Architectural embellishments that add visual interest to roofs, such as dormers, belvederes, masonry chimneys, cupolas, clock towers, and other similar elements are encouraged.*

- *Fenestration shall be architecturally compatible with the style, materials, colors and details of the building. Windows shall be vertically proportioned wherever possible. To the extent possible, upper story windows shall be vertically aligned with the location of windows and doors on the ground level, including storefront or display windows.*

The above examples should be used as a basis for developing a set of design standards appropriate to the Kelley's Corner business district.

MULTIFAMILY RESIDENTIAL ZONING

The existing multifamily developments in the Planning Area have densities well in excess of the five units per acre permitted in the Residential A district: the Redstone condominiums contain 24 units on 1.44 acres, for a density of 16.7 units per (gross) acre; and the 45 units at Yankee Village sit on 3.25 acres, representing 13.8 units per acre. In order to be consistent with the existing development in the area, therefore, it is recommended that the three single-family residence on the westerly side of Main Street between the Redstone condominiums and Hosmer House be zoned to permit 30 dwelling units on a total of 1.9 acres, i.e., a maximum density of about 15 units per acre.

HAYWARD ROAD INDUSTRIAL AREA

It is recommended that the residentially-zoned portion of parcel E-3/101 (Haartz Auto Fabrics) be rezoned to the General Industrial (GI) district, as discussed in Section 2.

4. CIRCULATION COMPONENT

TAMS Consultants, Inc.

INTRODUCTION

The Circulation Component of the Kelley's Corner Specific Area Plan addresses traffic and transportation conditions in the study area under both existing and projected future conditions. The recommendations presented in this part of the plan respond to the goals and objectives established by the Kelley's Corner Planning Committee. The recommended actions are also designed to address the issues identified during the earlier phases of the study, in particular the public forum held in January, 1995, and the workshop conducted in March, 1995.

Although many of the goals and objectives of the plan bear some relationship to circulation considerations, a number of the goals and potential actions which have been identified relate specifically to circulation and traffic. These include the following:

(i) Provide safe and efficient traffic flow within the Planning Area. Potential actions identified include:

- improve major intersections along the arterial highways, and
- reduce curb cuts.

(ii) Improve safe access to and across Route 2.

(iii) Create and improve safe pedestrian and bicycle access. Potential actions identified include:

- provide an appealing network of sidewalks and bikeways, and
- improve on the safety of crosswalks.

Hence, there is a call for an emphasis on safety and the pedestrian (and bicycle) environment, as well as the need to maintain roadway access and traffic capacity.

It is also useful to bear in mind the wide range of issues which have been identified through the study process. These issues are slightly different in the portion of the study area extending along Route 2, compared to those within the immediate Kelley's Corner area. Again, many of the land use, town character, public realm and infrastructure issues are related to circulation considerations, particularly with respect to the pedestrian environment and traffic impact and safety. The main circulation and traffic issues at Kelley's Corner include:

(i) Pedestrian links:

- widen existing sidewalks;
- complete missing sidewalk links;

- lack of pedestrian links within quadrants (particularly Ames);
- enhance pedestrian links to make them attractive; and
- location/safety of crosswalk between schools and K-Mart/McDonald's.

(ii) New pedestrian links to "green" areas:
- behind the Hosmer House between Main Street and Charter Road;
- to the south of K-Mart between Main Street and Prospect Street;
- Hosmer Street to Clearview Pond to Piper Road; and
- access to Great Hill recreation area.

(iii) Absence of bikepaths.

(iv) General roadway safety.

(v) Lack of turning lanes at intersections and driveways.

(vi) Multiple curb cuts.

(vii) Capacity/improvements at Main Street/Massachusetts Avenue intersection.

(viii) Difficult intersection at Main Street/Prospect Street.

(ix) Through traffic on Prospect Street.

(x) Pedestrian crossing at Kelley's Corner signal.

(xi) Difficult intersection for trucks at Main Street/Hayward Road.

The main circulation and traffic issues along Route 2 include:

(i) Access to and from Route 2 is important; however,
- there is varying opinion about the location of an interchange on Route 2, and
- any connection that is made should not attract through traffic on local roads.

(ii) Access across Route 2 is important, as the community is currently severed.

(iii) Transfer station access:
- Taylor Road/Hosmer Street area is adversely impacted by transfer station traffic, and
- better access for transfer station is needed.

(iv) Access to Auto Auction site must be accommodated without adverse impact.

(v) Safety issues:
- Taylor Road/Piper Road intersection;
- eastbound merge with Route 111; and
- movement from Route 111 to Taylor Road.

(vi) Traffic impacts of development along Route 2 between Piper Road and Hosmer Street.

(vii) Lack of bikepath connection to Kelley's Corner.

Although many of the issues identified through the study process are based upon current conditions and experience in the study area, they are issues which will be equally valid, if not even more important, in the future, particularly as development in and around Kelley's Corner progresses. The study calls for a plan which will balance economic development and growth management to minimize impacts to infrastructure and the environment. The Planning Commit-

tee has identified a revised zoning scenario which it hopes will achieve this balance, and the actions recommended in this Plan are intended to address circulation conditions which are expected under this scenario. Generally, however, they are actions which are appropriate for existing conditions and the interim period while "build-out" progresses.

The circulation plan recommendations have been developed to directly address the identified issues and respond to the established goals and objectives. Therefore, they have been categorized under the following four topics:

(i) Regional access (access to/from Route 2).
(ii) Local access (local connections and access to specific areas/sites).
(iii) Roadway capacity and safety improvements.
(iv) Pedestrian and bicycle environment.

A significant focus of the development of the circulation plan was the impact of the revised zoning scenario in terms of traffic generation. The next section summarizes the results of this analysis and identifies conclusions which have implications for the plan for the study area; and the final section presents the recommended actions which have been developed under the above categories, including order-of-magnitude costs for major infrastructure proposals.

BUILD-OUT ANALYSIS

The revised zoning scenario calls for a different approach to development in the four discrete parts of the study area. These four subareas are as follows:

(i) The Kelley's Corner Retail Center (Subarea A);
(ii) The Acton Shopping Center area (Subarea B);
(iii) The Hosmer Street to Piper Road area (Subarea C): and
(iv) The Hayward Road Industrial area (Subarea D).

The ability of the roadway network to accommodate additional traffic, and the need for infrastructure improvements to minimize adverse impacts, are fundamental to the success of the plan for Kelley's Corner. Accordingly, it was considered important to determine some measure of the magnitude of traffic impacts associated with the proposed revised zoning scenario. To achieve this, a trip generation analysis was performed, based on the build-out land use projections under existing and revised zoning. The analysis also included an assessment of trip generation for existing land uses to provide a baseline for comparison.

In brief, the analysis involved the application of vehicular trip rates extracted from the Institute of Transportation Engineers *Trip Generation Manual* (5th Edition). By necessity, a number of assumptions were made during this process, as the type of future land use, and changes in land use, can vary under any given zoning control (for example, light industrial use versus office park use within Subarea C). Further, the actual trip rate can vary considerably depend-

ing on the precise type of use (for example, a medical office compared to a general office, or a bank with or without a drive-through facility).

By careful examination of each land use within each subarea, however, realistic projections of possible build-out land use under both existing and revised zoning were determined, and representative trip rates were selected to reflect the likely development mix. The build-out under existing zoning reflects the conditions which might be expected under "no change" in zoning. The build-out scenarios are of course unlikely to be fully realized in practice, as they represent the ultimate amount of development that is permitted, rather than the amount of development that is likely to occur within a definite time period. They therefore represent a worst case analysis.

The results of the analysis are summarized in Exhibit A, which includes the projected daily vehicular trips under each build-out scenario (existing zoning and revised zoning), along with the estimates for existing land use. It is important to bear in mind that the estimates cannot be used to project specific increases in traffic on roadways within the study area, particularly as the origin-destination distribution is so complex, and the magnitude of through traffic (i.e., trips with no origin or destination within the study area) is unknown.

In addition, it is important to recognize that the estimates do not account for "linked" trips, i.e. trips which have more than one purpose. For example, a shopping trip is often made in conjunction with a work-to-home or school-to-home trip. Under the build-out analysis, three trip ends would be assessed for this "linked" trip (two for a visit to a store, and one for the work-to-home trip) whereas only two trips would occur in practice. Linked trips are also very common for certain uses such a gas station, and multiple linked trips often occur when more than one destination (for example a store or business) is visited by the same person as part of one trip. Equally, a trip such as a lunch visit to a local restaurant by a worker in the study area would be "double counted," and any trips associated with residential land use in the study area which have a trip end at another land use within the study area would represent "double counting" of trips.

Accordingly, the results of the trip generation analysis must be treated with caution. They do, however, serve to provide an order-of-magnitude estimate of the comparative traffic implications of each scenario, and comparison with existing conditions provides some indication of the level of increase in trip generation which might be possible.

It is clear from the results of the analysis that there are substantial variations in trip generation between subareas, reflecting the existing and potential land use variations in the different parts of the study area. The following points are worth noting:

(i) Residential land use represents a relatively minor component of trip generation, accounting for between 3-5% of total trips under all scenarios.

(ii) Under existing conditions, Subarea A (the Kelley's Corner Retail Center) is the most significant trip generator, accounting for about 59% of the trips generated in the study area, driven largely by retail activity.

(iii) Under the existing zoning build-out, there would be more than a doubling of daily trip generation in Subarea C (the Hosmer Street to Piper Road area), attributed mainly to the re-use of the Auto Auction site and the build-out of other office park sites. However, Subarea A would continue to be the dominant generator (57% of total), owing largely to the increase in retail floor area.

(iv) The additional daily trips generated under the existing zoning build-out would represent an increase of approximately 37% over existing conditions.

(v) As would be expected, Subarea B (the Acton Shopping Center area) and Subarea D (the Hayward Road Industrial area) would generate limited increase in trips under the existing zoning build-out. Indeed, this is also the case under the revised zoning build-out, despite the potential Haartz expansion, which would have a much lower trip generation rate compared to commercial uses in other areas.

(vi) The revised zoning build-out would more than double existing total daily trip generation, and would bring the total trip generation to a level about 50% higher than under existing zoning build-out.

(vii) Owing to the potential for increase in retail and commercial space in and around Kelley's Corner itself, Subarea A would continue to be the dominant generator under the revised zoning build-out. An increase of 129% over existing conditions is projected, and this is about 72% higher than projected under existing zoning build-out.

(viii) In Subarea C, trip generation would be about 35% higher under the revised zoning compared to existing zoning build-out, and the revised zoning build-out is about 180% higher than existing conditions. However, owing to the relatively lower trip rates associated with the anticipated office park/light industrial use, compared to commercial use rates in Subarea A, the build-out of this area only accounts for about 18% of the total study area.

The overall conclusions to be drawn from this analysis are that, although build-out under existing zoning will substantially increase daily trip generation, the increase is likely to be significantly greater under the revised zoning build-out. There would be a significant concentration of the new trips in the area in and around Kelley's Corner under either scenario. Only limited changes are projected for the Acton Shopping Center and Hayward Road Industrial areas. Although accounting for a smaller proportion of the total study area trips, the Hosmer Street to Piper Road area is expected to roughly double in trip generation under existing zoning

build-out. Under revised zoning, the additional generation in this area would increase only by about one-third more.

Clearly, these conclusions have important implications in the selection of recommendations for the circulation plan, as outlined in the discussion of each action identified in the next section. Again, however, it must be stressed that the analysis provides only an order-of-magnitude comparison of trip generation. This cannot be used to project increases in traffic volumes, owing to the unknown extent of "linked" trips and "double counting" of trips inherent in the analysis.

RECOMMENDED ACTIONS

The main objective of the recommended actions is to address future circulation conditions which are likely to prevail as the build-out under revised zoning proceeds. The broad analysis of trip generation described in the previous section provides an indication of the levels of travel demand which might need to be addressed under these conditions.

Although the extent to which existing conditions can realistically be improved in the short term is limited, the actions should also address existing problems where possible. It must be recognized, however, that many actions will only be possible over the longer term, owing to limitations in funding, right-of-way and control of existing development. Realistically, the actions should be viewed as a set of policies and proposals which, if adopted and integrated in the planning process now, will ultimately achieve their objectives over time.

Although detailed evaluation and design of alternatives is not feasible within this planning-level study, it is possible to identify policies and conceptual recommendations, as well as a number of specific proposals, which can be incorporated in the plan. Many will require much more detailed study before specific proposals can be designed and implemented. The recommended actions are identified under four main categories.

REGIONAL ACCESS

Regional access to the entire study area is largely dependent on connections to Route 2. Currently, the interchange at Route 27, Main Street, provides connections to and from both the eastbound and westbound directions. Access to and from the east on Route 2 is provided by the partial interchange with Route 111, Massachusetts Avenue. The nearby signalized connections of Taylor Road and Piper Road with Route 2 provide predominantly local connections.

Any decision concerning access to and from Route 2 must be pursued with the Massachusetts Highway Department (MHD), the highway agency with jurisdiction for this roadway. This will most likely be facilitated through the Route 2 Corridor Advisory Committee. Therefore it is not possible to identify specific proposals within the context of this plan, but clearly any recommendations regarding local access should not be dependent upon any specific assumption about the ultimate resolution of access connections/interchange with Route 2.

If the need for a new interchange (including connection across Route 2) is established, Hosmer Street would be a possible candidate location, located about 1.3 miles to the east of the Route 27 interchange. Although this would improve access to and from Acton to the north, including access for emergency vehicles, it would not provide significant enhancement of access for the core of the Kelley's Corner study area, and an interchange at this location might encourage the use of the Hosmer Street corridor by through traffic. Such an interchange might benefit the sites located along Route 2 between Piper Road and Hosmer Street, in particular the Auto Auction site, by providing immediate access to and from both directions on Route 2. Again, however, as discussed in the next section, any solution for local access should ideally not rely upon the ultimate decision regarding Route 2 access.

As far as Kelley's Corner specifically is concerned, the need for a new interchange on Route 2 appears to be questionable, particularly as it is desirable to minimize the encouragement of through traffic in the study area. However, it must be recognized that any significant change in access connections to and from Route 2 could impact through traffic at Kelley's Corner itself. Connections across Route 2 are also discussed in the next section.

- *The Town should continue to work with MHD and the Route 2 Corridor Advisory Committee to determine an acceptable solution for connections with Route 2 which will enhance access to the Kelley's Corner study area and minimize through traffic. Any such solution should not compromise proposals for local access.*

LOCAL ACCESS

In general, local access to the main commercial sections of the Kelley's Corner study area is reasonably well provided by the two main arterial routes, Main Street (Route 27) and Massachusetts Avenue (Route 111). These north-south and east-west route provide access to most of the study area. However, certain capacity limitations must be addressed, as discussed in Section 3.3 below.

The informal, private roadway adjacent to Ames (the "Middlesex Bank cut-through") is extensively used by both through and local access traffic, and this provides some relief to the Kelley's Corner signalized intersection. Formalization of this roadway would secure this benefit.

- *Formalization of this roadway should be pursued through its adoption by the Town as a public street. This transfer to the Town might be achieved through the development and/or re-development of adjacent land parcels.*

There are three specific deficiencies as far as local access is concerned:

- First, the connections across Route 2 are limited, and this tends to sever the community. However, it must be recognized that any connection across Route 2 has the potential to encourage through traffic along the relevant connecting corridor.

- Second, the main access to the transfer station is provided on and off Route 2 westbound. This arrangement is inadequate, and significantly impacts the local roadways in the area between Taylor Road and Hosmer Street, with local traffic often seeking access to the facility from the rear.

- Third, access to the Auto Auction site is severely limited, with entry and exit only from Route 2 eastbound. This problem will be exacerbated with the development of Subarea C along Route 2 unless alternate local access is provided.

It is possible that all three deficiencies might be addressed through the development of a frontage road system, in combination with an overpass across Route 2. There are several potential arrangements, which inevitably might be influenced to some extent by whatever Route 2 interchange solution is finally adopted.

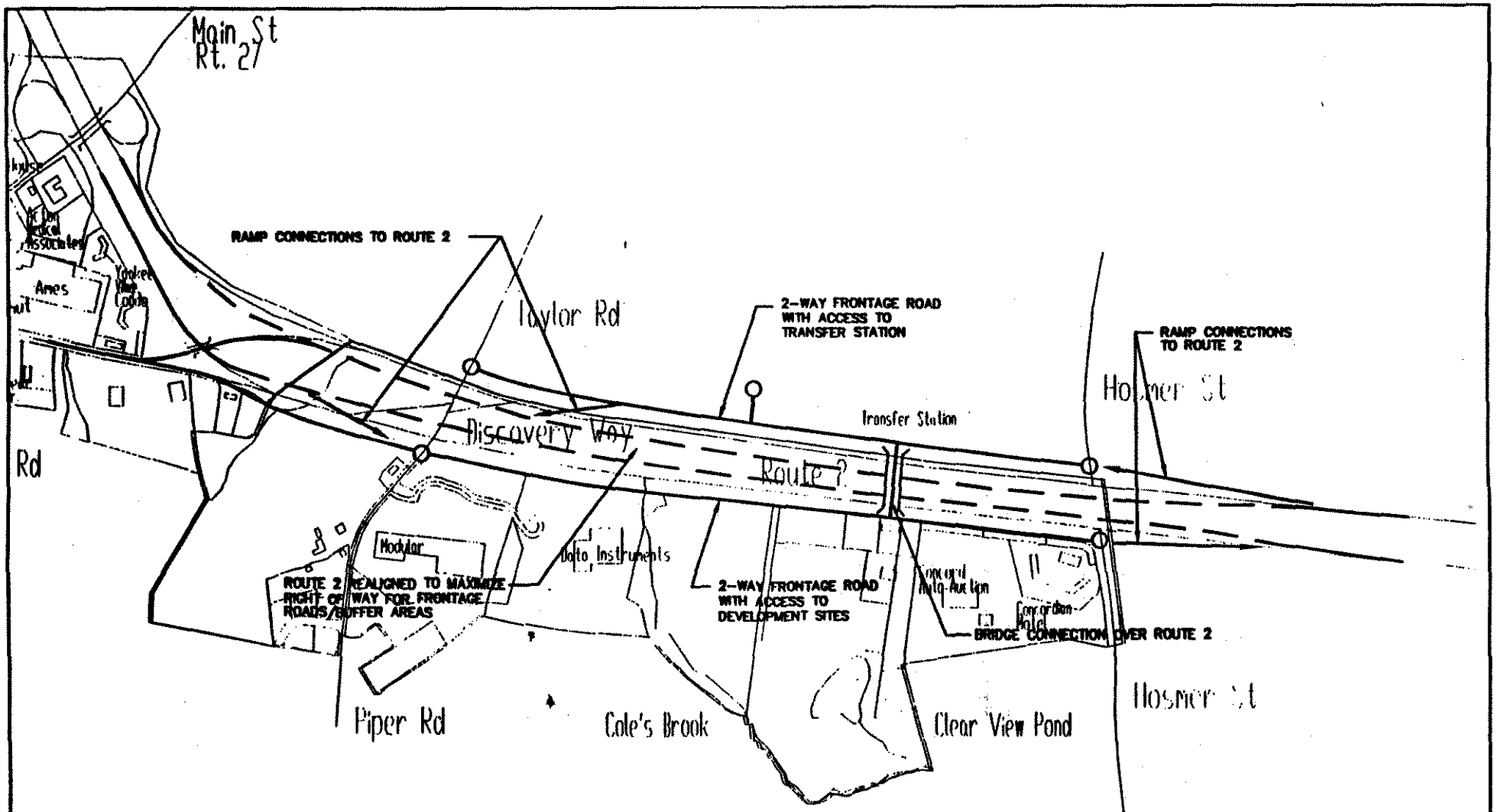
A fundamental need exists for a frontage road along the south side of Route 2 which would provide access for all of the Subarea C parcels, including the Auto Auction site. Such a facility appears to be essential in light of the projection of significant increased trip generation for these parcels under the revised zoning build-out. Similarly, a frontage road along the north side of Route 2 between Taylor Road and Hosmer Street would afford significant benefit as far as access to the transfer station is concerned.

Several options have been considered, involving one-way or two-way frontage roads on either or both sides of Route 2. Provision of an overpass connection across Route 2 at some central location could provide optimum flexibility of access, and ramp connections with Route 2 would significantly enhance regional access for study area parcels.

The development of a specific solution will depend upon many variables, including right-of-way, highway design considerations, wetlands and other environmental impacts. It is also clear that any proposal must be closely coordinated with efforts relating to Route 2 itself. However, on balance it appears that the provision of two-way frontage roads on both sides of Route 2, connected by an overpass, would provide the optimum solution. Connections of the frontage roads with Route 2 would be important to provide regional access to the Subarea C parcels.

■ *The concept of a frontage road system along Route 2 with a connecting overpass should be pursued to provide adequate local access to existing and anticipated new development. This proposal should be developed in close coordination with the efforts of MHD and the Route 2 Corridor Advisory Committee.*

A conceptual arrangement for such a frontage road system is illustrated in Plan A. It must be stressed that this proposal is in conceptual form only, and that it would be subject to substantial design evaluation and investigation. An important consideration would be the establishment of adequate buffer zones between Route 2 and the frontage roads. As suggested on Plan A, this



PLAN A

CONCEPTUAL PROPOSAL FOR SUBAREA C FRONTAGE ROADS

JUNE 1995

might be achieved by the realignment of Route 2 so that the current median area is reduced and the area available for buffers is increased.

Order-of-magnitude costs have been developed for the main components of the proposal, as follows:

North Side Frontage Road	$ 1,850,000
South Side Frontage Road	$ 2,800,000
Route 2 Ramps	$ 800,000
Realignment of Route 2	$ 3,000,000
Overpass Bridge Structure	$ 900,000
Bridge Approach Retaining Structures	$ 2,080,000
Bridge Approach Fill	$ 600,000

The above costs allow for nominal grading, drainage and street lighting. However, they do not reflect any requirements for significant cut and fill, wetlands, secondary structures, etc. Moreover, they are based on limited survey information, and should therefore be treated with extreme caution. It should also be noted that, owing to space limitations, it has been assumed that the bridge abutments and ramps would be created by earth fill and retaining walls. For reasons of aesthetics, it would be desirable to investigate alternate design concepts.

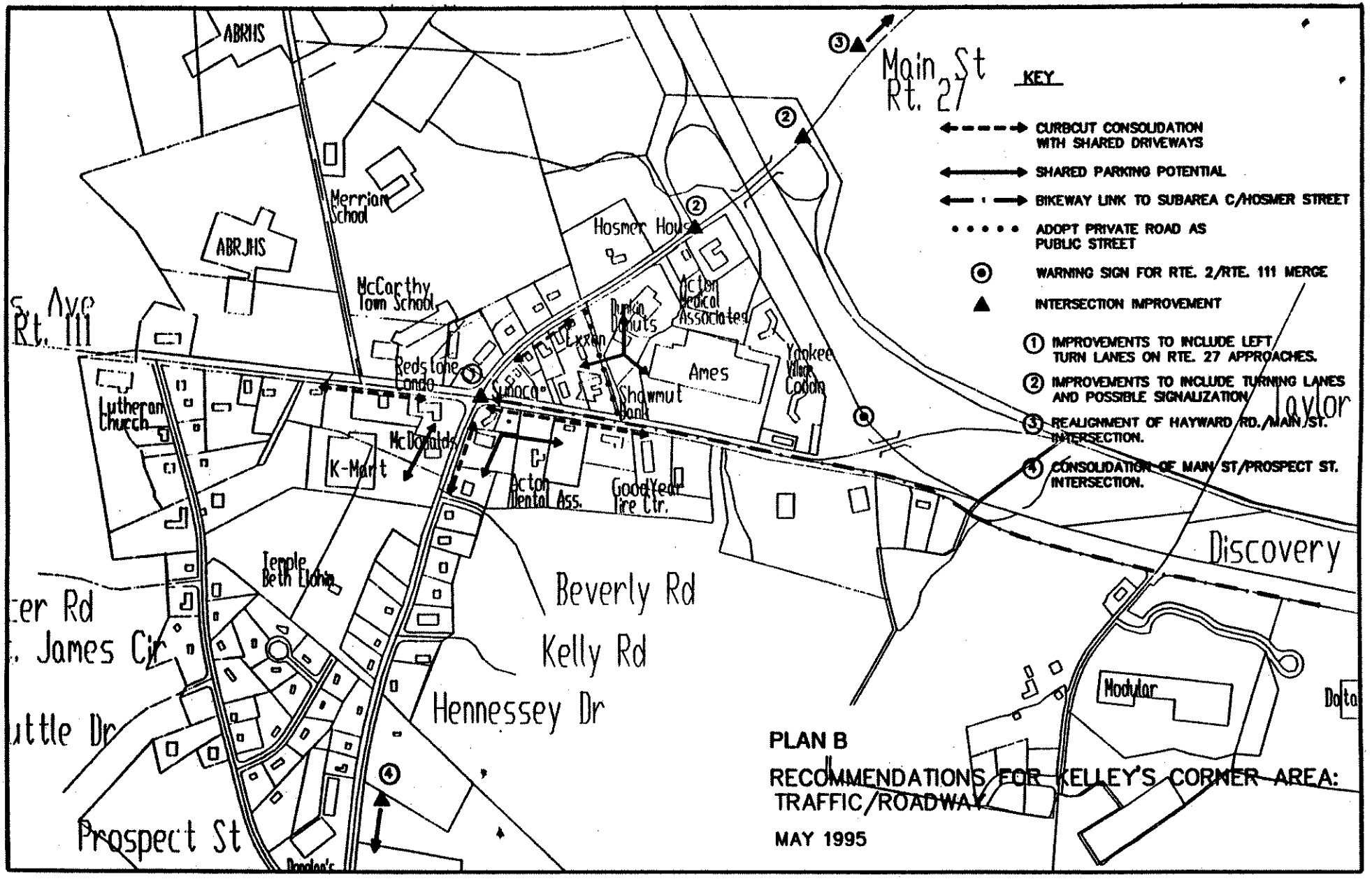
ROADWAY CAPACITY AND SAFETY

As shown by the build-out trip generation analysis, substantial increases in traffic are likely to occur in the immediate Kelley's Corner area under revised zoning build-out. As previously discussed, it is therefore essential that roadway capacity and safety improvements be developed to mitigate possible impacts. It must be recognized, however, that any such measures will undoubtedly be somewhat limited by available right-of-way. In any event, there is some desire to limit wide-scale roadway improvements and achieve a more acceptable balance between traffic capacity and the amenity of the area for other users. Therefore, operational and safety-related measures should be given priority.

Specific recommended traffic and roadway improvements in the Kelley's Corner area are illustrated, where appropriate, in Plan B.

- ***Priority should be given to roadway improvements which primarily provide operational and safety benefits. Many such improvements must be accomplished over the longer term through the control of new development and re-development by appropriate zoning requirements. Potential policies include the following:***

    - ***Access points should be consolidated to minimize the number of curbcuts, with combined driveways serving adjacent sites and parking areas where possible.***


ABRHS
Merriam School
ABRJHS
McCarthy Town School
Hosmer House
Main St
Rt. 27
KEY
CURBCUT CONSOLIDATION WITH SHARED DRIVEWAYS
SHARED PARKING POTENTIAL
BIKEWAY LINK TO SUBAREA C/HOSMER STREET
ADOPT PRIVATE ROAD AS PUBLIC STREET
WARNING SIGN FOR RTE. 2/RTE. 111 MERGE
INTERSECTION IMPROVEMENT
① IMPROVEMENTS TO INCLUDE LEFT TURN LANES ON RTE. 27 APPROACHES.
② IMPROVEMENTS TO INCLUDE TURNING LANES AND POSSIBLE SIGNALIZATION.
③ REALIGNMENT OF HAYWARD RD./MAIN ST. INTERSECTION.
④ CONSOLIDATION OF MAIN ST/PROSPECT ST. INTERSECTION.
Rt. 111
Lutheran Church
Redstone Condo
Sunoco
Exxon
Dunkin Donuts
Acton Medical Associates
Shawmut Bank
Ames
Yankee Village Condo
K-Mart
McDonalds
Acton Dental Ass.
GoodYear Tire Ctr.
Temple Beth Elohim
Beverly Rd
Kelly Rd
Hennessey Dr
Prospect St
Discovery
Modular
PLAN B
RECOMMENDATIONS FOR KELLEY'S CORNER AREA:
TRAFFIC/ROADWAY
MAY 1995

- *Left turn lanes at driveways and access points should be provided where possible to improve safety and minimize disruption of traffic flow.*

- *Extended curbcuts along parking areas should be eliminated to better define circulation and improve safety.*

- *Shared parking areas should be encouraged, with good internal connections between adjacent areas to minimize the need for external travel between separate lots.*

■ *Specific roadway safety and operational improvements which should be pursued and implemented where feasible include the following:*

- *Installation of warning signs on Route 2 eastbound on the approach to the slip road from Route 111 and the weave to Taylor Road, in conjunction with flashing warning signs.*

- *Improvements to the Taylor Road/Piper Road signalized intersection with Route 2 in coordination with MHD initiatives.*

- *Realignment of the intersection of Hayward Road and Main Street to accommodate truck movements.*

- *Improvements to the Route 27, Main Street/Prospect Street intersection,*

■ *Intersection improvements, many of which have been previously studied, should be further pursued at the following key locations:*

- *Kelley's Corner signals (Route 27, Main Street/Route 111, Massachusetts Avenue), including additional traffic lanes, pavement striping and enhanced signal phasing/timing. Free right turn lanes should be considered to enhance capacity, but their impact to pedestrian movement should be an important consideration (see next section).*

- *Route 27, Main Street/Route 2 ramp intersections, including turning lanes, pavement striping and possible signalization.*

PEDESTRIAN AND BICYCLE ENVIRONMENT

Conditions for pedestrians and bicyclists are of significant importance, particularly in light of the overall scale and character of the study area which it is hoped will be fostered under the plan. In light of the substantial increase in traffic which is anticipated under the revised zoning build-out, however, it is important that facilities for these users be properly planned for if their environment is to be enhanced, and use of these modes is to be encouraged.

Specific recommended pedestrian and walkway improvements in the Kelley's Corner area are illustrated, where appropriate, in Plan C.

■ *The following program of pedestrian and bicycle facilities should be pursued and implemented where feasible. Again, many proposals will be accomplished only over the longer term in conjunction with the control of future development.*

- *Sidewalks should be provided on both sides of the roadway throughout the Kelley's Corner core area along all commercial frontages and in the vicinity of the school area. Elsewhere, sidewalks should be provided on at least one side.*

- *A continuous sidewalk connection should be provided from Kelley's Corner along the frontage of the Route 2 (Subarea C) parcels.*

- *Sidewalk widths should be maximized, with a desirable minimum of 6 feet. Sidewalks should generally be provided with concrete walking surfaces. Where sidewalks abut the roadway, they should be clearly defined by use of granite curbs.*

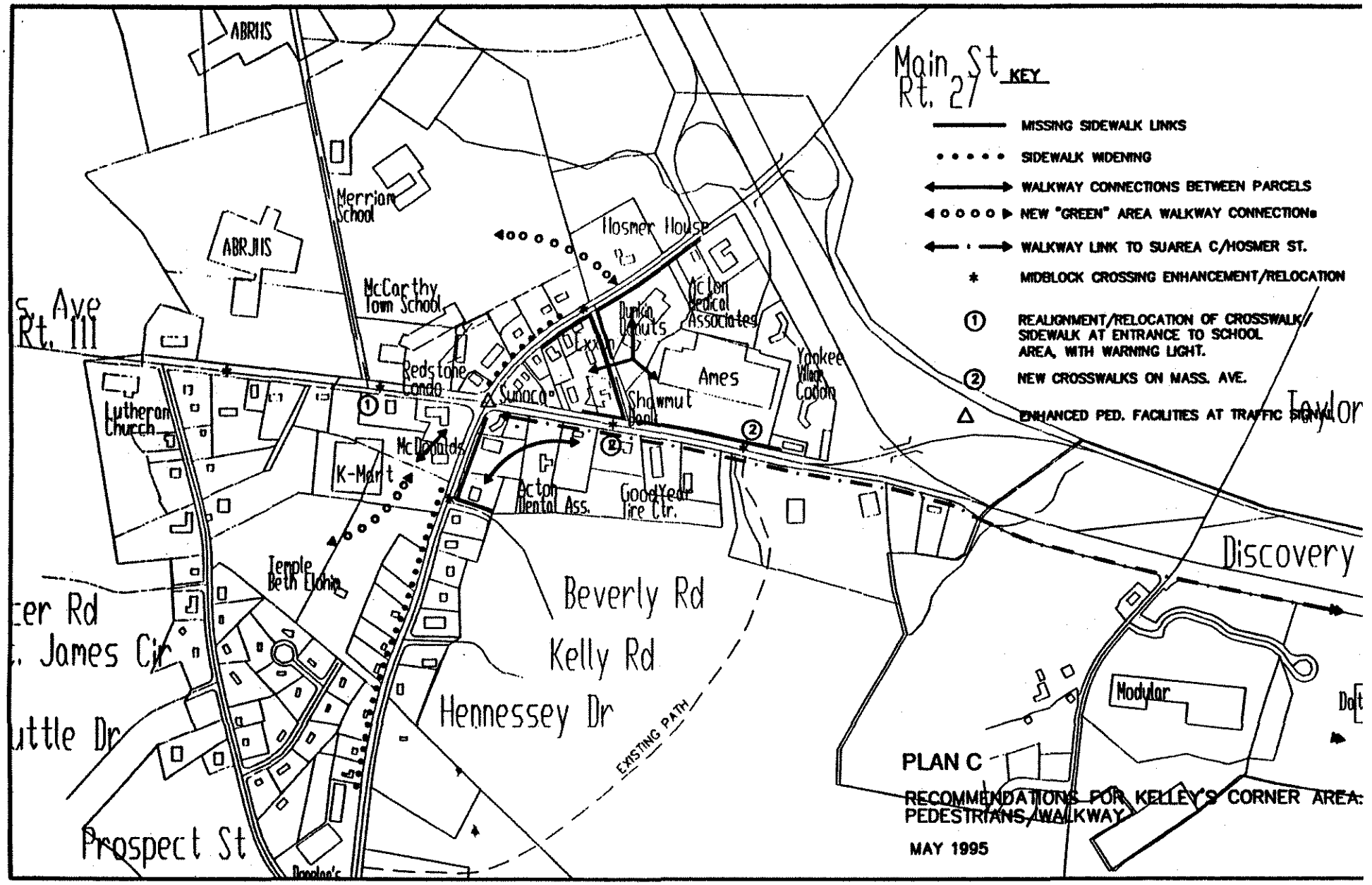
- *Walkway connections within and between development parcels should be established and/or enhanced.*

- *Walkway connections should be established to serve "green" areas, including the areas to the west of the Hosmer House, to the southwest of K-Mart, and to the south of the Subarea C parcels and Great Hill recreation area.*

- *The crosswalk facility at the Kelley's Corner signals should be afforded high priority in the potential improvements of this intersection. Crossing distances should be minimized where possible, and adequate pedestrian phases incorporated.*

- *The crosswalk and sidewalk at the entrance to the school area (Charter Road) on Massachusetts Avenue should be relocated/realigned to better encourage its use and cater for pedestrian movement to the rear of the K-Mart site. Realignment of Charter Road at this location may facilitate optimum improvement. A flashing warning light should be installed to better identify the location of the crosswalk at the crest in the profile of Massachusetts Avenue.*

- *Justification for mid-block crosswalks, including possible need for pedestrian signals, should be investigated on Main Street (north and south of Massachusetts Avenue) and Massachusetts Avenue (east of Main Street).*


ABRHS
Main St
Rt. 27
KEY
MISSING SIDEWALK LINKS
SIDEWALK WIDENING
WALKWAY CONNECTIONS BETWEEN PARCELS
NEW "GREEN" AREA WALKWAY CONNECTION
WALKWAY LINK TO SUAREA C/HOSMER ST.
MIDBLOCK CROSSING ENHANCEMENT/RELOCATION
① REALIGNMENT/RELOCATION OF CROSSWALK/ SIDEWALK AT ENTRANCE TO SCHOOL AREA, WITH WARNING LIGHT.
② NEW CROSSWALKS ON MASS. AVE.
ENHANCED PED. FACILITIES AT TRAFFIC SIGNAL
Merriam School
Hosmer House
McCarthy Town School
Action Medical Associates
Dunkin Donuts
Exxon
Ames
Yankee Village Condo
Redstone Condo
Sunoco
Shawmut Bank
Lutheran Church
McDonalds
K-Mart
Acton Dental Ass.
Goodyear Tire Ctr.
Temple Beth Elohim
Beverly Rd
Kelly Rd
Hennessey Dr
EXISTING PATH
Modular
Discovery
Taylor
Prospect St
Douglas's
PLAN C
RECOMMENDATIONS FOR KELLEY'S CORNER AREA: PEDESTRIANS/WALKWAY
MAY 1995

- *Relocation of the crosswalk to the east of Prospect Street on Massachusetts Avenue should be investigated.*

- *Bikeway connections should be provided throughout the area where possible. Realistically, it is unlikely that separate bikeways can be achieved in most areas. Alternate facilities could include striped 5 feet wide lanes along curbsides, extra-wide travel lanes (minimum 14 feet), or shared sidewalk/bikeways (minimum 11 feet).*

- *A bikeway connection from Hosmer Street to Kelley's Corner should be incorporated in the development of designs for the proposed frontage road system along Route 2.*

5. WASTEWATER MANAGEMENT ISSUES

REVIEW OF EXISTING WASTEWATER CONCERNS AND PREVIOUS STUDIES

The question of how to treat domestic and commercial wastewater is one which Acton must address regardless of whether or not additional growth occurs in the Kelley's Corner area. In 1988 the Town commissioned a feasibility study of connecting Kelley's Corner to the proposed South Acton treatment facility.[9] The study area defined for that study encompassed a smaller area than the current Kelley's Corner Planning Area, including the residential neighborhoods on Beverly, Doris, Francine, Kelley and Nadine Roads, but excluding the areas east of Acton Plaza and north of the school campus. The study area included 100 dwelling units – nonresidential floor area was not stated. Total wastewater flow in 1990 was projected to be 70,560 gpd (average), increasing to 111,000 gpd by the year 2010. The cost of extending trunk mains from South Acton to Kelley's Corner and installing a collection system for the Kelley's Corner area was estimated to be $1.9 million.

The 1994 West Acton Village Study estimated that it would cost up to $5 million to sewer the entire village, compared with an estimated cost of $1 million for a tertiary treatment plant to serve approximately 40 homes in the village. However, more recently it has been estimated that a 200,000 gpd "package" treatment plant could be developed for a much lower cost, perhaps in the range of $750,000.[10] The sharp drop in costs is due in large part to new technology which has resulted in rapidly declining costs for small wastewater treatment plants (i.e., so-called "package" plants).

In addition to the declining costs of package treatment facilities, the fiscal impact of such facilities must also be measured against the cumulative private costs of maintaining, repairing and replacing older individual sewage disposal systems, i.e., septic systems and cesspools. With the recent revisions to the State Sanitary Code (Title 5), there is a new mandate for property owners to ensure that their existing private systems provide adequate treatment. If, as suggested in the Town's 1988 Kelley's Corner wastewater facility study, the homes and businesses in the planning area have a rate of system failures that is higher than average for Acton, then this burden will fall especially heavily on home and business owners in and adjacent to the Kelley's Corner Planning Area. One measure or estimate of the cost implications is to assume a combination of property transfer rates and septic system failure rates, and from this compute the number of system replacements that may be necessary on an annual basis. Then, assuming a replacement cost of $15,000 per system, an annual cost of the existing wastewater management "program" may be estimated.

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[9]SEA Consultants, Inc., *Kelley's Corner Supplemental 201 Facilities Planning Study*, Revised Draft, May 1988.

[10]Notes from Planning Committee meeting of April 3, 1995 (discussion with Doug Halley, Health Director).

ESTIMATED WASTEWATER GENERATION – EXISTING AND BUILDOUT

In considering the sizing of a treatment facility as well as the incremental impacts of proposed zoning changes, it is first necessary to review the existing levels of development and the volumes of wastewater that these levels produce. The table on the following page outlines the existing numbers of dwelling units and nonresidential floor space by subarea of the planning area, the corresponding figures at buildout under existing zoning, and the corresponding figures at buildout under the proposed development scenario. Note that the existing and potential development levels are significantly higher than those used in the 1988 facility study because the current Kelley's Corner Planning Area includes a considerable area in addition to that used in the 1988 study (particularly the area extending to the east of Acton Plaza extending to Hosmer Street).

The table also presents estimates of total wastewater generation in each of the four subareas for existing condition and each of the two buildout scenarios. These estimates were developed using data from the 1990 Census on Acton's average household size in single-family and multi-family dwelling units, and the following standard multipliers:[11]

Land Use	Wastewater Generation (gpd)	
Single-family	65	per capita
Multi-family	65	per capita
Office	79.98	per 1000 sq. ft.
Retail	91.16	per 1000 sq. ft.
Industrial	129	per employee

The estimated wastewater volume for the school campus (25,300 gpd) is taken from the 1988 facility study.

As the table indicates, existing wastewater generation in the planning area is estimated to be about 200,000 gallons per day (gpd). The buildout condition under existing zoning represents an increase of approximately 80,000 gpd (39%) over existing wastewater generation: this suggests that Acton should plan for treating about 280,000 gallons per day of wastewater *without any change* in existing zoning. Implementing this land use plan would expand the potentially needed capacity by an additional 100,000 gpd (50 %).

Previous discussions have focused on a total treatment plant capacity of 150,000 to 200,000 gpd. The implications of the buildout analysis, if confirmed by further review, are that the total capacity needed to serve the entire Planning Area could be twice this figure.

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[11]Robert W. Burchell et als, *Development Impact Assessment Handbook*, Washington: ULI-The Urban Land Institute, 1994; p. 263.

Wastewater Generation Estimates

	SUBAREAS				STUDY AREA TOTAL
	A	B	C	D	
Existing					
Single-family units	8	51	3	1	63
Multi-family units	69	0	0	0	69
Office (sq. ft.)	118,806	0	166,251	2,230	287,287
Retail (sq. ft.)	246,582	35,132	0	0	281,714
Industrial (sq. ft.)	12,715	0	105,754	283,479	401,948
Educational (sq. ft.)	0	0	0	447,328	447,328
Build-out - existing zoning					
Single-family units	6	95	55	32	188
Multi-family units	69	0	0	0	69
Office (sq. ft.)	204,669	0	555,340	4,443	764,452
Retail (sq. ft.)	280,695	36,946	0	0	317,641
Industrial (sq. ft.)	19,531	0	145,229	283,479	448,239
Educational (sq. ft.)	0	0	0	447,328	447,328
Build-out - prop. scenario					
Single-family units	6	95	18	2	121
Multi-family units	96	0	0	0	96
Office (sq. ft.)	199,161	0	823,284	4,443	1,026,888
Retail (sq. ft.)	627,975	36,946	0	0	664,921
Industrial (sq. ft.)	36,591	0	217,844	415,553	669,988
Educational (sq. ft.)	0	0	0	447,328	447,328
Estimated Wastewater Generation					
Existing	45,553	13,347	41,178	98,815	198,892
Buildout (current zoning)	56,891	22,263	92,825	105,158	277,137
• Net change from current	11,338	8,917	51,647	6,343	78,244
• % change	24.9%	66.8%	125.4%	6.4%	39.3%
Buildout (prop. scenario)	95,915	22,263	125,630	133,266	377,074
• Net change from current	50,361	8,917	84,452	34,451	178,182
• % change	110.6%	66.8%	205.1%	34.9%	89.6%
• Change from exist. buildout	39,024	0	32,806	28,108	99,937
• % change	85.7%	0.0%	79.7%	28.4%	50.2%

However, it should also be noted that a single solution may not necessarily be the best approach; rather, the needed capacity might be provided by using several smaller facilities. For example, the School Department is currently evaluating the options for addressing existing treatment issues on the school campus, and has identified an approach that could accommodate and treat all school-related sewage on-site. This would address about 25,300 gpd, or 9% of the total problem at buildout under current zoning. Similarly, the Haartz facility may be able to continue to address its wastewater disposal and treatment needs on-site, rather than making a long connection to a treatment facility on the other side of the Planning Area. In addition, some of the areas in the southerly portion of the Planning Area (approaching the intersection of Main and Prospect Streets) might be more efficiently served through a connection to South Acton, if capacity at the Great Hill treatment plant is adequate.

If a sewage treatment facility is located in the easterly end of the planning area, consideration should also be given to sizing the facility to accommodate flows from additional residential neighborhoods surrounding the planning area, in particular, the Kelley Road area and the Brucewood neighborhood behind the Auto Auction site. The 1988 facility study estimated wastewater flows from the Kelley Road area in 1990 to be 7,200 gpd, increasing to 11,400 gpd by the year 2010.

SYSTEM FINANCING

Based on prior studies and information about facility cost trends, we estimate the wastewater treatment system cost to be $3.8 million for a facility (or combination of facilities) with a total capacity of 400,000 gallons per day, as follows:[12]

Collection System	$ 1,500,000
Pump Station/Force Main	500,000
Treatment Facility	1,500,000
Land Cost (4 acres at $75,000/acre)	300,000
Total	$ 3,800,000

[12]Note that these are general "ballpark" costs for illustrative purposes and are not based on a specific layout or system design.

Costs for such a system might be distributed as follows:[13]

	Federal/State	Local
Collection System	45%	55%
Pump Station/ Force Main	70%	30%
Treatment Facility	70%	30%
Land Cost	0%	100%

Using this cost distribution, the local capital cost of the wastewater treatment system would be $1,725,000.

The costs of a municipal sewage treatment facility are typically distributed between charges on the individual users and general assessments to the community through taxes. The particular distribution in each case is determined as a local policy decision, and may relate to the extent of coverage of the system, the community's determination as to public benefit from addressing current wastewater treatment problems (for example, the public benefits of improving water quality in the streams from reducing the off-site impacts of individual septic systems), or other factors. For this analysis we assume that 50% of the local capital cost of the system ($862,500) is paid for through the issuance of a general obligation bond, and 50% is assessed to individual users in the study area on a proportionate basis based on wastewater flows. Based on a 20-year bond at an interest rate of 6%, the initial annual cost to the Town would be approximately $95,000, representing about 7 cents on the tax rate.

The capital cost assessed to individual users would depend on the total number of dwelling units and businesses connected to the system. The 1988 facility study estimated that the capital cost portion of the typical residential user fee for the combined Kelley's Corner/South Acton wastewater treatment facility would be $315 per year, if 50% of the cost of a $3.2 million facility were borne by 100 residential users. The current analysis assumes a somewhat higher total facility cost, but also a larger service area, so the residential user fee might be somewhat lower than estimated in 1988.

In addition, there would be an annual operating and maintenance (O&M) cost for the treatment facility, which could be assigned directly to the system users through annual user fees. The 1988 facility study estimated that the O&M portion of the typical residential user fee for the combined Kelley's Corner/South Acton wastewater treatment facility would be $332 per year, based on an estimated annual O&M cost of $116,269 and a total of 100 residential users.

Finally, the question of whether a portion of the wastewater treatment facility costs could be borne by impact fees has been raised. In this regard, it must be noted that impact fees can only be used to pay for the incremental costs associated with development (this is addressed in

[13]Based on the cost distribution in the 1988 *Kelley's Corner Supplemental 201 Facilities Planning Study*, pages 7-1 – 7-2.

detail in Section 8 of this report). In this case, the incremental costs would need to be computed as the cost of providing (a) the additional treatment capacity that will be required by future development, plus (b) the additional cost of trunk lines and connections that might be attributable to the new development (although these latter costs could be assessed more directly through a user fee).

The additional plant capacity needed to accommodate increased wastewater flows resulting from future development—including both development now allowed under existing zoning plus the increment that would be permitted by the proposed zoning changes—has been shown above to be about 178,180 gpd, or about 47% of the total potential demand from the planning area.[14] This percentage, therefore, would be the maximum portion of the cost of a treatment plant that might be recovered through impact fees, if an impact fee system were put into place immediately and applied to all residential and commercial development.

[14]See table on page 45. Note, however, that sizing the wastewater treatment facility to accommodate additional existing development (e.g., from surrounding residential neighborhoods) would reduce the fraction of total flows generated by new development and, therefore, the portion of the total cost that could be assigned to new development and recaptured through impact fees.

6. ECONOMIC DEVELOPMENT STRATEGY

Cambridge Economic Research

OBJECTIVE & OVERVIEW

The demographic bulge that was created by the post-war baby boom has largely shaped present-day Acton. The town's growth as a bedroom suburb during the 1950's and 1960's and its development as an employment and upper middle class residential center during the 1970's and eighties follows the life cycle, lifestyle preferences, and buying power of this generation. Demographic trends will continue to alter the function and form of the town as the majority cohort continues to age and the town matures as both an employment and a residential center.

Acton has emerged as a classic "urban village" with a growing service and industrial employment base. In the 1960's, most Actonians commuted into Boston. Now, nearly one in every four residents is employed within the town. The vast majority of people in Acton now work in other edge cities within the outer suburban ring. Only one in seven workers now commutes to traditional employment centers in Boston and its inner suburbs.

In this strategy paper we address issues relating to the implications of both structural and cyclical economic and demographic trends for the Kelley's Corner District. We begin with a review of the employment structure and changes in the town's economic base over the past decade. Comparisons are drawn with both the wider region and with surrounding towns. This is followed by an overview of regional and local real estate market trends. The next section contains detailed market information for uses that have market potential for absorption of vacant and underused redevelopment sites in the Kelley's Corner district. Finally, potential financing mechanisms for the costs of implementing the public improvements necessary to support the planned development are described and a recommended economic development strategy is presented.

ECONOMIC BASE ANALYSIS

CHANGE IN EMPLOYMENT 1984 - 1993

Acton has registered a net gain of almost 1500 jobs over the past decade as new growth service and manufacturing firms began to decentralize from the inner employment centers of Cambridge and Boston and to push out along the Route 2 corridor toward I-495.

Acton's employment base proved to be relatively resilient throughout the last recession compared with most communities in the region. The pinnacle of the "miracle years" was achieved in 1988, when employment totaled 9,941. By 1991, the community had lost nearly 1,000 jobs. But after three years of employment losses, recovery began in 1992 and since then, Acton has regained more than 300 jobs.

Table 6-1 compares employment changes in Acton between 1984 and 1993 with those in the towns of Concord and Lexington. In percentage terms, Acton's growth exceeded that of the other two communities, registering a growth of 6.1% between 1984 and 1993, compared with gains of just 0.2% and 3% in Concord and Lexington respectively. The latter two communities have suffered continued losses of employment since 1988. In Concord, over 1,200 jobs have been lost since 1991, nearly as many as in the trough of the recession which occurred between 1988 and 1991. By contrast, Acton has witnessed a net gain of 316 jobs since 1991.

Not only the quantity, but also the quality of jobs in Acton has improved over the past decade. The average wages paid by firms located in Acton increased by 25% (in real terms) during the ten year period to $32,250 by 1993.

Table 6-1
Employment Change in Acton, Concord and Lexington, 1984 - 1993[15]

	Acton	Concord	Lexington
1984	7,844	11,994	17,377
1988	9,941	12,126	18,803
1991	8,989	10,784	16,823
1993	9,305	9,563	16,153
Ave. Annual Change:			
1984 - 1988	6.1%	0.3%	2.0%
1988 - 1991	-3.3%	-3.8%	-3.6%
1991 - 1993	1.7%	-5.8%	-2.0%
1984 - 1993	1.9%	-2.5%	-0.8%
Forecast:			
1990-2020	15,100	14,800	17,700
% Change 1990-2020	58.4%	25.4%	0.0%

Source: Mass Department of Employment & Training

CHANGE IN FIRMS 1984-1993

Although employment in Acton increased by only 2% from 1984 to 1993, the number of firms grew by 27% – 142 new firms were established during this period (Table 6-2). Concord and Lexington realized similar growth in the number of firms but both registered losses in employment.

Acton has a greater concentration of small firms than the other two towns and this in part accounts for its quick recovery from the last recession. In Acton, the average firm employed 15

[15]The employment data in this table, as well as those presented in Tables 6-2, 6-3, & 6-4, only include establishments subject to Unemployment Compensation contributions. The data do not distinguish between full-time and part-time positions; thus it is not possible to gauge how much of the employment change indicated by the data might be the result of businesses using more part-time employees in place of fewer full-time employees. Also, the data exclude self-employed persons, and therefore do not cover "independent" contract workers whose functions are identical to ordinary employees even though technically they might be self-employed.

people in 1984; by 1994 average employment per establishment decreased only slightly to 14 workers. In Concord, average employment decreased from 20 per establishment in 1984 to just 12 in 1993.

Table 6-2
Change in Firms and Average Employees per Business, 1984 -1993

	Acton	Concord	Lexington
Avg. No. of Employees Per Business:			
1984	15	20	22
1993	14	12	15
% Change, 1984-1993	-6.9%	-39.8%	-29.6%
Number of Firms:			
1984	517	599	829
1993	659	793	1,058
% Change, 1984-1993	27.5%	32.4%	27.6%

Source: Mass Department of Employment & Training

EMPLOYMENT STRUCTURE

Table 6-3 shows the employment structure of Acton for eight major sectors. Comparisons are drawn with the economic structure of the rest of the state by calculating location quotients. Location quotients compare the proportion of a local area's employment by sector with the statewide averages. For example, Acton has a location quotient of 1.61 for manufacturing. This means that the Town's proportion of manufacturing jobs is 161% of the statewide average.

Thus, Acton has a very high proportion of jobs in production-oriented activities. This has been the town's most vulnerable sector. Manufacturing job losses have been recorded every year since 1987; job losses in this critical sector totaled 1,380 over the past five years (Table 6-3).

Acton's manufacturing sector is dominated by a number of distinct clusters: printing and publishing, electronics, and instruments account for almost 70% of the town's manufacturing employment. "Gazelle" firms—technology-intensive, medium-sized, high-growth firms in all sectors—include New England Computer Graphics, Data Instruments, Setra Systems, and Lau Technology dominate in these sectors, offering good prospects for further growth.

Acton's importance as a retail center is shown in its high proportion of jobs in retailing, 118% of the state-wide average. Generally, retailing provides low-paying, part-time jobs with few benefits but does offer work experience and training opportunities to students and to entry-level workers. Over-dependence on retailing makes Acton vulnerable to cyclical economic downturns, which have an immediate impact on retail spending.

Table 6-3
Employment Structure of Acton Compared With Massachusetts

	Percent Employment		Location
	Acton	Massachusetts	Quotient
Agriculture	0.9%	0.7%	1.30
Construction	3.2%	2.9%	1.10
Manufacturing	26.2%	16.3%	1.61
Trans,Com, Util.	1.7%	4.3%	0.40
Whsle. & Retailing	27.5%	23.2%	1.18
Fin, Ins, Real Est.	4.0%	7.0%	0.57
Services	25.9%	32.3%	0.80
Government	10.6%	13.3%	0.80
TOTAL	100.0%	100.0%	1.00

Source: Mass Department of Employment & Training

Although jobs in personal and business services have grown rapidly over the past decade, Acton's proportion of jobs in these sectors is still 20% below the state average. Acton has a low proportion of employment in other non-retailing service sectors such as transportation and finance, insurance and real estate (FIRE). These sectors have sustained steady growth since 1984 which has offset job losses in manufacturing (Table 6-4). Small and medium-sized service firms in the service sector offer the best prospects for employment growth in Acton during the remainder of this century. The town's largest service industry employers are presently ENSR (environmental engineering), America Home Toy Parties (catering) and Acton Medical Associates which employ from 80 to 330 people.

Table 6-4
Employment Change in Acton by Sector, 1984 - 1993

	Employment			Average Annual Change		Total Change
	1984	1988	1993	1984-1988	1988-1993	1984-1993
Agriculture	81	147	79	16.1%	-11.7%	-2.5%
Construction	512	546	293	1.6%	-11.7%	-42.8%
Manufacturing	2,785	3,818	2,438	8.2%	-8.6%	-12.5%
Trans., Comm., Util.	116	98	160	-4.1%	10.3%	37.9%
Whsle. & Retailing	2,096	2,767	2,552	7.2%	-1.6%	21.8%
Fin., Ins., Real Est.	243	307	374	6.0%	4.0%	53.9%
Services	1,251	1,345	2,408	1.8%	12.4%	92.5%
Government	748	898	988	4.7%	1.9%	32.1%
TOTAL	7,832	9,926	9,292	6.1%	-1.3%	18.6%

EMPLOYMENT FORECASTS 1990-2020

Table 6-5 shows employment forecasts from 1990 until 2020 for industrial, R&D, office, and retail sectors. These categories were developed from total MAPC forecasts[16] to provide a basis for forecasts of future demand for non-residential buildings, contained in Section 3. By the end of this century, Acton is expected to add 1800 jobs. During the first decade of the next century, 2700 jobs are expected to be added. Job growth is expected to slow substantially after that. By 2020, there are projected to be 15,100 jobs in Acton – an increase of 5,600 jobs over the 1990 level. Over half of the job gains are expected to be in office-based and R&D-intensive activities.

Table 6-5
Employment Forecasts for Acton by Type of Commercial Space Occupied, 1990 - 2020

	Employment Forecasts				Increase			
	1990	2000	2010	2020	1990-2000	2000-2010	2010-2020	1990-2020
Industrial	3,372	3,711	4,081	4,231	339	370	150	859
R&D, Office	3,002	3,871	5,312	5,900	869	1,441	588	2,898
Retail	1,730	2,058	2,550	2,750	328	492	200	1,020
Village Service	1,396	1,661	2,058	2,219	265	397	162	823
Total Jobs *	9,500	11,300	14,000	15,100	1,800	2,700	1,100	5,600

* Includes Agriculture, Construction, and Government Employment

Source: MAPC forecasts; Sectoral breakdown estimated by CER based on current employment structure

COMMERCIAL REAL ESTATE MARKET TRENDS

MIX OF PROPERTIES

The total value of all real property in Acton is $1.4 billion. Although the town has gained a significant number of jobs in the past two decades, residential property still accounts for over 83% of assessed valuation (Table 6-6) and produces a nearly equal share ($25.9 million) of total property tax collections. Commercial properties generated just $3.3 million in taxes last year. Within the commercial sector, the town has a very well-diversified portfolio of buildings. Office, retail, industrial, and distribution properties each comprise roughly 25% of the total floor space (Table 6-7).

[16]The figures shown for "Total Jobs" in this table are the same as presented for Acton in the Kelley's Corner Plan Inventory and Analysis Report, Table 20 ("Community Employment Forecasts").

Table 6-6
Acton's Property Tax Base, 1995

	Residential	Commercial	Industrial	Total
Town-Wide Assessed Valuation	1,158,650,300	165,081,992	70,575,500	1,394,307,792
% of Assessed Value	83.1%	11.8%	5.1%	100.0%
Kelley's Corner Assessed Valuation	14,586,100	28,503,800	7,428,070	50,517,970
% of Assessed Value	28.9%	56.4%	14.7%	100.0%

Source: Acton Planning Department and Assessors Office.

Table 6-7
Existing Mix of Commercial Property In Acton

	Sq. Ft. (000's)	Percent of Total Sq. Ft.
Office	1,180	26.2%
Retail	1,038	23.0%
Industrial	1,180	26.2%
Distribution	1,110	24.6%
Total	4,508	100.0%

Source: Acton Assessor's Office

ABSORPTION OF COMMERCIAL PROPERTY: 1988 - 1994

This section reviews trends in two types of commercial real estate:

(1) Speculatively ("spec") built: These are rental properties built by developers and investors.

(2) Owner-built: These are built by owners for their own occupancy.

The over-heated real estate development market of the early and mid-1980's created a glut of speculative commercial space. High vacancy and falling rents has brought commercial real estate investment to a virtual standstill in the Greater Boston area over the past seven years. The last spec building in Acton was completed in 1989. Shortly afterward, this 3-story 95,000 sq. ft. R&D building in Nagog Park, was fully leased to a large environmental engineering firm.

Although development of spec space has come to a halt, the owner-built market has been lively in Acton during what have been very slow years for real estate development. Owner-occupants have benefited from the reduced site prices and competitive construction bidding brought about by the recession. From 1988 to 1994, a total of 736,200 sq. ft. of office, retail, industrial, and distribution space has been built by owner-occupants (Table 6-8). This represents

an annual absorption of 13 acres a year. As is discussed in the next section, this concurs with employment-based forecasts of annual demand for the period 1990 to 2000.

Table 6-8
Absorption of Non-Residental Acreage in Acton, 1988-1994

	Constructed 1988-1994	Acres Absorbed	Avg. Annual Absorption
Office	320,753	36.8	5.3
Retail	93,328	10.7	1.5
Industrial	171,577	26.5	3.8
Distribution	119,153	13.7	2.0
Other	31,358	3.6	0.5
TOTAL	736,169	91.3	13.0

Note: All of the above was owner-built or build to suit

Source: Acton Planning Department compiled from building permits

Of the total of 736,200 sq.ft. built since 1988, over 600,000 sq. ft. were built in 1988 and 1989, the peak of the real estate boom. Since 1990, 128,000 sq. ft. of owner-built commercial space has been added to the tax rolls. Development during this latter period has consisted primarily of smaller spaces, including both expansion of existing facilities and new construction of village retail and services, large durable goods retailing, and warehousing. Projects completed during the 1990s have included a 17,200 sq. ft. car dealership on Route 27 built in 1992, and a 33,000 sq. ft. addition to an industrial park property.

ABSORPTION FORECASTS: 1990 TO 2020

Table 6-9 presents employment forecasts and floor space absorption forecasts for Acton for the period 1990 to 2020. These have been derived from MAPC's employment forecasts. It shows that, from 1990 to 2000, there is projected to be a total increase of 1536 jobs in industrial, office-based, and retailing activities. These forecasts would seem to be on target; from 1990 to 1993, 400 new jobs were created in Acton and the rate of employment increase can be expected to accelerate as the regional economy again begins to grow. Employment forecasts have been converted to forecasts of floor space requirements by using the Institute of Traffic Engineers employment density multipliers for office, industrial, and retail floor space.

Table 6-9

Future Demand for Commercial Floorspace and Acreage in Acton, 1990 - 2020[17]

	1990-2000	2000-2010	2010-2020	1990 - 2020
Projected Employment Increase (no. of jobs)				
Industrial	339	370	150	859
R&D and Office	869	1,441	588	2,898
Retail	328	492	200	1,020
Total	1,536	2,303	938	4,777
Estimated Floor Space Required (sq. ft.)				
Industrial	179,365	195,767	79,365	454,497
R&D and Office	289,667	480,333	196,000	966,000
Retail	655,647	983,471	400,673	2,039,792
Total	1,124,679	1,659,571	676,038	3,460,289
Total Acreage Required	172	254	103	530
Annual Acreage Required	17.2	25.4	10.3	17.7

Sources: MAPC Employment Forecasts, Institute of Transportation Engineers Employment Multipliers, Cambridge Economic Research

The projected increase of employment is expected to create a demand for an additional 1.1 million sq. ft. of commercial floor space in Acton during the period 1990 to 2000. Over half of this requirement is expected to be retail space. Although job forecasts for retail are substantially below those for office and R&D space, floor space required is much greater due to the low employment multipliers for retailing (0.5 employees per 1000 sq. ft. compared with 3 per 1000 sq. ft. for office and R&D space).

During the first decade of the next century, the demand for non-residential floor space in Acton is expected to accelerate to 1.7 million sq. ft.. Forecasts for 2010 to 2020 are more conservative at 676,000 sq. ft., but are less reliable than shorter term 10 to 20 year forecasts.

[17]The categories of commercial floor space in this table correspond to the categories in Table 6-8 as follows: "Industrial" in Table 6-9 includes the "Industrial" and "Distribution" categories shown in Table 6-8; The "R&D" and "Office" categories in Table 6-9 are included in the "Office" category in Table 6-8; and "Retail" is the same in both tables.

Forecasts of floor space required have been converted to acreage by assuming a Floor Area Ratio of 0.15 to represent an average density permissible on existing industrially-zoned land.[18] This yields estimates of annual demand of 17 acres a year until 2000. This generally concurs with the actual level of demand which occurred from 1988 to 1994 when an average of 13 acres a year were absorbed for commercial development in Acton (Table 6-8). Annual demand for non-residential acreage is expected to accelerate during the remainder of this decade and in the following decade.

Total demand for non-residential acreage until 2020 is projected to be 530 acres (Table 6-9). This represents 43% of the remaining 1,240-acre supply of buildable non-residential acreage in the town.

DEMAND FOR SPECIFIC USES

ACCEPTABLE USES

As part of the planning process for Kelley's Corner, a planning charrette was held during which community residents articulated preferences for the types of development that are compatible with their visions and goals for the town of Acton. This section investigates the market for a number of uses that the people of Acton believe would be beneficial to the economic and social development of the community, supporting its image as a pleasant residential community, bolstering housing values, contributing to the fiscal base of the community, and providing highly-skilled jobs for educated resident workers as well as local service jobs for high school students and lesser-skilled residents.

The uses for which we have been asked to examine the market include:

- Village retailing
- Box retailing
- Mixed use industrial and office park
- Conference Center
- Commercial Recreation
- Continuing Care Retirement Center

The last five are prospective uses for the 64-acre Auto Auction site, which currently has a build-out potential of 375,000 sq. ft., and the Piper Road site, with 10 buildable acres and potential for a building of 87,000 sq. ft..

[18]Acton's industrial zoning districts have FAR limits of 0.20, 0.10 and 0.04. The figure of 0.15 used here to estimate demand for industrial land is an approximation, and is not based on an analysis of the amounts of available land in each zoning district.

Since 1988, a number of small retail, restaurant, and auto service-related units ranging in size from 1000 to 5000 sq. ft. have been built in East, West, and North Acton. Very little has been built in Kelley's Corner during this time, due to the low supply of development sites. Most retail units built in Acton since 1988 have been in the vicinity of the intersection of Routes 2A and 27, where development sites for small retail and service-oriented units are being rapidly depleted.

There are a number of vacant small retail units in the town. These are:

Location	No. of Units Vacant	Sizes (sq. ft.)	Triple Net* Rent (per sq. ft.)
Routes 2A & 27	5	2,000 to 4,000	$12.00 - $15.00
Heritage Mall (Route 2A)	2	3,700 to 1,700	$12.00 - $16.00
Rte. 27 & 111 (Kelley's Corner)	1	18,000	$12.00

* "Triple net" means base rent only, excluding utilities and maintenance charges.

The 18,000 sq. ft. unit is the vacant former Plywood Ranch store in Acton Shopping Plaza. It has been vacant for several months but a lease is currently pending on the property.

Within the Kelley's Corner area there are few opportunities for development of new retail units, based on current zoning. The following parcels have some potential for retail expansion, but each has particular limitations due to zoning, location or other factors:

- The Main Street frontage of the K-Mart parcel provides an opportunity for commercial infill, which could improve the appearance of this area by partially screening the extensive parking area. It appears that another building similar in scale to the existing McDonald's could be placed in this area – this would mean a floor area of perhaps 5,000 sq. ft. on one level or 10,000 sq. ft. in a two-story building. Under existing zoning regulations, however, the site is built out, with a floor area ratio of 0.247; in order to permit such incremental development, the zoning for this site would have to be adjusted to allow FAR's of up to 0.28.

- The Acton Dental Associates property on the south side of Massachusetts Avenue has the potential under current zoning for an additional 38,000 sq. ft. of floor area; however, most of the vacant land on this lot is located behind the abutting parcels, and is therefore more suited to office use or accessory parking than to a retail use requiring high visibility.

- The parcel at the junction of Massachusetts Avenue and Rqute 2 has capacity for an additional 18,000 square feet of floor area. This area is zoned for business use, but has poor access because of the Route 2 interchange and is somewhat removed from

the center of the Kelley's Corner retail area. It is therefore not appropriate for a village-scale retail use.

- There are two residential structures in the Kelley's Corner zoning district, located near the intersection of Main Street and Massachusetts Avenue. Under the existing zoning they have a theoretical capacity for about 4,000 square feet of commercial floor area, but by themselves their practical potential for commercial development is limited by the narrow lot configurations and access difficulties due to the steep topography on the Massachusetts Avenue side.

There is forecast to be a demand for over 656,000 additional sq. ft. of retailing in Acton by the year 2000 (Table 6-9). Given the depletion of good sites for further retail development as well as infrastructural constraints, this may be hard to achieve. Nonetheless, the retail market is expected to be strong, although the major component of demand is for large stores (discussed in the following section). The market for small ground and upper floor units of around 1000 sq. ft. renting for $10 to $12 sq. ft. will be supported by the further growth and development of the business and personal service sector in Acton.

Although vacant parcels for additional retailing are limited in Kelley's Corner, there are a number of opportunities for redevelopment and upgrading of existing strip shopping centers. An example of the type of incremental upgrading is the improvements to the Acton Shopping Plaza which are now underway. The Route 111 side of the Plaza (i.e., CVS, Friendly's, Ames, Roche Brothers) has undergone facade renovation, parking lot, and landscaping improvements. The Route 27 side of the Plaza (Dunkin' Donuts, dry cleaners, former Plywood Ranch) is scheduled for similar improvements in the near future.

A key candidate for redevelopment is the property at 257 Main Street (near the Southeast corner of Routes 27 and 111) which contains a bowling alley, a pizza restaurant, and a dentist's office. The owner would like to redevelop the property with small retail and service units close to the road but would need density bonus to achieve a sufficient return on investment.

Incentives that the town could provide to owners for upgrading and redeveloping existing retailing and service properties in Kelley's Corner include tax increment financing, 5 to 10 year tax abatement, and betterment bonds.

BOX RETAILING

Box retailers are large, volume retailers occupying either freestanding stores or anchoring strip "power centers", rather than malls. A number of national and regional "box" store chain store retailers and supermarkets have been looking for sites and units in Acton and in surrounding towns. Some of these retailers have expressed interest in sites in the study area that are zoned for other uses (in particular, the Concord Auto Auction site). Some specific chains that have been mentioned in discussions with area real estate professionals include:

- Staples
- Taylor Rental Center
- Agway Garden Center
- Stop and Shop
- Wal-Mart
- Blockbuster
- Woodworkers Warehouse
- Victory Market
- Osco

These retailers are willing to pay two to three times in excess of fair market value for good sites. For example, the Auto Auction site, which is currently assessed by the Town at $4 million, has an estimated potential value of up to $8 million for retail use but possibly as low as $2 million for office use. This estimate of a significant difference in the value of land for retail and industrial use is confirmed by current assessed valuations for other parcels in the Kelley's Corner planning area: the average land component of assessed values for developed property in the Kelley's Corner planning area is $122,401 per acre of developable site area (DSA) for industrial land, but $214,897 per acre of DSA for commercial land.

At present, box retailing is by far the strongest segment of the non-residential development market. However, sites in the Route 2 corridor area for large retail uses are scarce due to both infrastructural constraints and public opposition to further encroachment of high traffic-generating uses on the serenity and character of the towns lining the corridor. With the exception of the vacant 18,000 sq. ft. unit in Acton Shopping Plaza (which now has a lease pending), there are no sites for additional box stores in Kelley's Corner.

OFFICE PARK

"Office Park" uses refer to a combination of office, industrial, and R&D or flex space. The market for renter-occupied office park space in Acton has improved substantially over the past few years and vacancy rates are very low. Table 6-10 shows data on the supply and demand for speculatively built office, R&D, and industrial space in 1990, 1992, and 1995 both in the town of Acton and in the entire 495 North market area, of which Acton occupies the Southeast Corridor. Excluded are all 100% owner-built structures, which, as noted in Section 3, has been the major focus of development in Acton since 1988.

The major focus of speculative development in Acton has been R & D space. R&D buildings are one to three story buildings with flexible space accommodating uses ranging from office to laboratory to light industrial. Nearly three-quarter of all spec space in Acton is R&D space, compared with 55% in the whole of the 495 North area. Table 6-11 contains a listing of rents and vacancy status of major Class A spec office, R&D, and industrial buildings in Acton as of January 1995.

Acton has attracted many young, growing, technology-intensive firms expanding from Cambridge and from other inner suburban locations along the Route 2 corridor. With the abatement of the recession, vacancy in R&D space has decreased from 24% in 1993 to 5.5% in 1995

Table 6-10
Supply and Demand for Spec-Built Office, R&D, and Industrial Space
in Acton and in the 495 North Market Area

		Acton			495 North Market Area		
		Office	R&D	Industrial	Office	R&D	Industrial
Jan. 1990:							
	Total Space	85,210	451,390	60,000	1,058,327	9,360,042	2,373,526
	Vacant Space	35,400	66,100	60,000	212,973	2,310,950	1,523,470
	Percent Vacant	41.5%	14.6%	100.0%	20.1%	24.7%	64.2%
Jan. 1992:							
	Total Space	85,210	400,700	60,000	2,183,092	8,968,914	2,989,211
	Vacant Space	13,915	96,447	60,000	305,004	2,674,829	1,567,425
	Percent Vacant	16.3%	24.1%	100.0%	14.0%	29.8%	52.4%
Jan. 1995:							
	Total Space	85,210	514,700	97,000	3,619,092	9,694,157	4,290,298
	Vacant Space	0	28,186	0	1,198,504	2,689,858	1,632,910
	Percent Vacant	0.0%	5.5%	0.0%	33.1%	27.7%	38.1%
Average Annual Absorption (1)		7,080	8,276	19,400	29,502	202,810	48,486
No. of Years Supply		0	3	0	41	13	34

(1) Based on 5 year history for Acton (1990 to 1995) and a 10 year history for the 495 North Market Area

Source: Spaulding & Slye Colliers, Greater Boston Market Reports

Table 6-11
Office, R&D, and Industrial Space Available in Acton
First Quarter of 1995

		Date Built	Floors	Total Rentable Area	SF Available	Rent/ SF	% Vacant
Office:	289 Great Road (Strawberry Hill Office Park)	1981	4	85,210	FULL	$15.00	0.0%
R&D:	2-8 Craig Road	1976	1	45,000	FULL	$5.50	0.0%
	10-16 Craig Road	1976	1	33,600	9,600	$5.50	28.6%
	30 Nagog Park	1983	3	19,200	FULL	N/A	0.0%
	33 Nagog Park	1978	3	24,600	5,586	$12.50	22.7%
	35 Nagog Park	1988	3	95,000	FULL	N/A	0.0%
	40 Nagog Park	1983	1	31,800	FULL	N/A	0.0%
	43 Nagog Park	1984	2	58,500	13,000	$8.00	22.2%
	125 Nagog Park	1985	3	73,000	FULL	N/A	0.0%
	97 Piper Road	1969	1	114,000	FULL	N/A	0.0%
	310 School Street	1982	1	20,000	FULL	N/A	0.0%
	Total R&D			514,700	28,186		5.5%
Industrial:	19 Craig Road	1975	1	37,000	FULL	$5.50	0.0%
	20 Craig Road	1973	1	60,000	FULL	$5.50	0.0%
	Total Industrial			97,000	0		0.0%

Source: Spaulding & Slye Colliers, Greater Boston Market Report, Jan. 1995

(Table 6-10). Absorption of R&D space in the whole of the 495 North market has been much slower: the vacancy rate now stands at 28%.

Both office and industrial space in Acton is currently 100% occupied. In the whole of the 495 North Market area, one-third of office space and nearly 40% of industrial space is vacant. There is estimated to be a 34 year supply of office space in 495 North, a 40 year supply of R&D space, and enough R&D space to be sufficient for the next 13 years (Table 6-10).

Although perhaps more similar to the Metro West market area, Acton is classed in the 495 North market area by real estate analysts Spaulding & Slye. With such large contractions as Wang, Digital and Apollo Computer, the 495 North area has perhaps been the area of Greater Boston hardest hit by the recession. Table 6-12 compares rents and vacancy rates for R&D space in Acton with those of other towns and cities in the 495 North market area. Although at $10.00 per sq. ft. rents in Acton are much higher than in most other towns, the 5.5% vacancy rate for R&D property is the lowest in the market area. This contrasts sharply with neighboring Boxborough, with rents of $7.00 and a vacancy rate of 62%. Rents in the whole of the area average $6.00 sq. ft. and vacancy averages 28%.

Table 6-12
Vacant R&D Space in Acton Compared with Other 495 North Communities, 1995

	Average Net Rent	Percent Vacant
Acton	$10.00	5.5%
Andover	$12.00	28.5%
Boxboro	$7.00	61.8%
Chelmsford	$4.50	25.5%
Littleton	$5.00	33.2%
Lowell	$5.50	35.0%
Methuen	$5.50	48.3%
North Andover	$7.00	13.7%
Tewksbury	$5.00	30.3%
Tyngsboro	$6.00	58.7%
Westford	$6.00	29.4%
Total 495 North	$6.00	27.7%

Source: Spaulding & Slye Colliers, Greater Boston Market Reports, First Quarter 1995.
Note: Excludes Haverhill and Lawrence, which are also in the 495 North area.

Recovery of the real estate market of the Greater Boston area is spreading outward from the downtown area to the Route 128 toward 495. Downtown absorbed 2 million sq. ft. of office space in 1994 and vacancy there is down to 14%, its lowest level since 1990. High growth bio-science and software, environmental engineering, communications, and other technology-intensive companies are expected to continue to absorb R&D space as they expand from Cambridge up

Route 2 toward the 495 Northwest Corridor. Acton is at an advantage being located east of 495. Its economic and real estate market recovery has even outperformed that of Route 2 communities along 128.

Nonetheless, the credit crunch created by persistent high vacancy rates and declining rents in the 495 north market area is expected to impede the construction of additional spec office park space until about 2000. By then, Acton should see new speculative office park development. The market for owner-built property has been strong since 1988, however (Table 6-8). Despite high vacancy rates, a shortage of large contiguous units is developing. This is stimulating the owner-built and build-to-suit markets which offer the best short-term prospects for reuse of the major Route 2 sites in the Kelley's Corner Planning Area.

During the first decade of the next century, speculative construction should resume, albeit at a much more modest pace. The rapid pace of development and employment change that Acton experienced over the past 20 years was due to the demographic bulge created by the baby boom generation coming of age and women entering the labor force in record numbers. These trends burgeoned the demand for goods and services produced in light industrial, R&D, and office space. The bull markets of the eighties will not be repeated in most of our lifetimes. Over the past 20 years, a total of about 3 million sq. ft. of office, R&D, and industrial floor space was built in Acton. From 1990 until 2020, just 1.4 million sq. ft. is forecast (Table 6-13): this is only half the level of the previous two decades.

Table 6-13
Future Demand for Commercial Floorspace in Acton, 1990 - 2020

	Industrial	R&D and Office	Total
Projected Employment Increase			
1990–2000	339	869	1,208
2000–2010	370	1,441	1,811
2010–2020	150	588	738
1990–2020	859	2,898	3,757
Estimated Floorspace Required (sq.ft.)			
1990–2000	179,365	289,667	469,032
2000–2010	195,767	480,333	676,101
2010–2020	79,365	196,000	275,365
1990–2020	454,497	966,000	1,420,497

Note: Based on Employment Projections shown in Table E-5.
Sources: MAPC Employment Forecasts, Institute of Transportation Engineers Employment Multipliers, & Cambridge Economic Research.

CONTINUING CARE RETIREMENT CENTER

Continuing Care Retirement Centers (CCRC's) are a relatively new approach to elderly housing that are being developed in response to the demand for alternative housing options to meet the changing needs of people over 55 as they age. CCRC's have been fueled by both the increase in the number of people approaching retirement age and the growing affluence of the elderly population, created partly by the burgeoning home values of the eighties.

Table 6-14 shows that there are ten CCRC's providing 1,626 independent living units in the Greater Boston area. Six of these are in the Metro West Area, where a more affluent population is concentrated. There are a variety of models of CCRC's but they all provide security, one or more daily meals, cleaning and other domestic services, and on-site health care. Half of the ten CCRC's in greater Boston have nursing home beds for acutely and chronically ill patients. Two have assisted living units, which are between serviced apartments and nursing home accommodation.

Entrance fees range from $65,000 to $205,000 for one-bedroom units up to $250,000 to $500,000 for two-bedroom units. The entrance fees are 95% refundable after the resident leaves and are thus regarded by elderly people and their successors as a form of low-risk capital conservation investment. Monthly service fees range from $1100 to $3100, varying with the package of domestic, transportation, and health care services provided.

There are two CCRC facilities in the immediate vicinity of Acton. The Brookhaven in Lexington, with 202 units, is fully occupied and has a waiting list. Newbury Court in Concord, a 75-unit center completed less than a year ago, has a waiting list for one-bedroom units.

Research has shown that most elderly people moving to a special care facility would prefer to stay within 5 miles of their family homes or their children's homes. The market in Acton for elderly housing is reportedly very vibrant with demand emanating from people from Acton, from surrounding communities, and those with children in Acton and in surrounding communities. There are long waiting lists for both Section 8 and market rate elderly housing units in the town. The Audubon Hill condominium development for people over 55 has been very successful, having sold out relatively quickly even during the recessionary early nineties. The development offers 77 two-bedroom 1,000 sq. ft. units with 800 sq. ft. finished basements on a 70-acre site. These units are now selling for prices in the low $200's and there is a long waiting list for units.

Acton is regarded to be an attractive place for upscale elderly housing development due to the affluence of the population and to high housing values. Elderly people selling homes in Acton could expect to realize upwards of $200,000 tax free. An additional source of demand is parents and grandparents of the large number of young families in Acton. The availability of convenience shopping within walking distance is an asset to an elderly housing site in Kelley's Corner as is the availability of rail transit into Boston. There are reported to be investors looking for elderly housing sites in Acton.

Table 6-14
Continuing Care Facilities in the Greater Boston Area

Location	Name	Entrance Fee	Monthly Fee	Independent Living Units	Assisted Living Units	Nursing Home Beds
Metro West:						
Bedford	Carlton-Willard	$65K-$250K	$1100-$2000	137	80	120
Concord	Newbury Court	$195K-$422K	$1400-$2890	75		
Lexington	Brookhaven	$169K-$371K	$1100-$3100	202		40
Newton	Lasell Village	PLANNED				
N. Andover	Edgewood Life Care	$205K-$490K	$1200-$1600	250		
Westwood	Fox Hill Village	$170K-460K	$1250-2500	356		70
Metro South:						
Walpole	New Pond Village	$144-$250K	$1100 +	167	32	90
Canton	Orchard Cove	$182K-$426K	$1150-$2200	NA		
Needham	North Hill	$138K-$385K	$1000-$1600	340		72
Boston						
Jamaica Pl.	Springhouse	$99K-$172K	$1200-$2800	99		
Total				1626	112	352

Population Over 55 in Boston MSA 600,775

Source: Executive Office of Elder Affairs, Commonwealth of Massachusetts
Note: Also in MetroWest, but not in our database, is Golden Pond in Hopkinton

Table 6-15 shows that in 1990, there were 2,726 people over 55 in Acton who comprised 15% of the population. By 2010, the number of people over 55 will more than double to nearly 6,200 at which time they will comprise almost one-third of the town's population, a proportion that will outstrip the MSA's 25% proportion of elders. Although the Town's present, predominantly baby-boom population has a median income 50% above the regional average, it is difficult to project from this base the socio-economic character of future Acton's elderly population.

Table 6-15
Growth in Population Over 55 in Acton and the Region, 1990 - 2020

		Acton	MAPC Region
1990:	Persons Over 55	2,726	600,775
	% of Population	15.3%	20.6%
	% of Elderly Below Poverty	4.4%	11.4%
2000:	Persons Over 55	4,267	633,544
	% Growth 1990-2000	56.5%	5.5%
	% of Population	21.2%	21.4%
2010:	Persons Over 55	6,193	737,072
	% Growth 2000-2010	45.1%	16.3%
	% of Population	29.3%	25.1%
2020:	Persons Over 55	6,678	890,832
	% Growth 2010-2020	7.8%	20.9%
	% of Population	30.3%	30.6%

Source: MAPC Forecasts

COMMERCIAL RECREATION

At present, there appears to be no significant demand for large sites for commercial recration in the market area. There are, however, opportunities for development of joint use commercial recreation facilities in conjunction with a resort-type hotel/conference center. This is discussed in the section below.

HOTEL/CONFERENCE CENTER

Similar to the trends observed for other non-residential development, the recovery of the hotel market is spreading from the center of the metropolitan area out to the suburbs. Thus far, it has reached the 128 loop, where hotel occupancy rates have improved by about 10% over the past year or two and now stand at about 68% – 10% above the level during the 1990 to 1992 slump. Hotels in the 495 area are still experiencing occupancy rates in the fiftieth percentile. Cyclical

recovery is unlikely in the short term as the supply of rooms is regarded to be well in excess of existing and potential demand.

At present, the hotel market in the Route 2 area between 128 and 495 is saturated with supply of the standard hotel product. Within 10 miles of Acton, there are six major franchise hotels with conference facilities. These are listed in Table 6-16. Most of these are in the 128 loop area. They have a total of over 1,404 rooms and 72 meeting and banquet rooms ranging in size from 400 to 8000 sq. ft.. The closest to Acton is the Sheraton Tara in Lexington with 119 rooms and 6 meeting rooms.

Table 6-16
Hotels with Conference Facilities within 10 miles of Acton

Hotel	Location	No. of Hotel Rooms	No. of Meeting Rooms	Sizes of Meeting Rooms (Sq. Ft.)
Holiday Inn	Boxborough	200	15	250-13,200
Westford Regency	Westford	n.a.	n.a.	n.a.
Clarion Carriage	Sudbury	37	5	700-1,100
Guest Quarters Suite	Waltham	275	7	650-3,000
Holiday Inn	Woburn	251	10	400-4,200
Sheraton Tara	Framingham	375	17	5,000-8,000
Sheraton Tara	Lexington	119	6	620-1,500
Weston	Waltham	347	27	450-6,200
Total Rooms		1,604	72	

Source: 1994 Greater Boston Meeting Planners Directory

Although there is no shortage of standard, franchise hotels, there is demand for unique resort-type conference center facilities with under 35 rooms and upscale recreational facilities. At present, there are just two of these. Perhaps the most popular is the Stonehedge Inn in Tyngsborough, on Route 3 near the New Hampshire Border. This is an upscale facility situated in the midst of a paddock claiming to provide the ambiance of an English manor and billing itself as "New England's most formidable boutique hotel" (sic). It has 35 rooms at $170 to $190 a night and two meeting rooms of 500 and 1110 sq. ft. in the same price range. Tennis courts, a health and beauty spa, and a very expensive French restaurant are offered on site.

Westminster Village Inn, one hour west of Boston off Route 2 (near Leominster) is a similar facility providing country style rooms and suites and a number of meeting and functions rooms, indoor and outdoor pools, and tennis. Prices are lower than at the Stonehedge Inn.

These two conference centers are reportedly popular with technical companies and professional associations in the MSA, and the Upper New England region. They host corporate retreats, sales meetings, and regional meetings of professional associations. Most of this business emanates from the downtown and Route 128 area. Since there is no public transportation from

the airport or other parts of the MSA, guests travel by car. Profits are made not on meeting space but from room rentals and restaurant receipts.

According to meeting planners consulted, there is a demand in the metro area for a resort-type Conference Center/Inn with a golf course. At present, only two standard-type hotels offer on-site golfing – the Sheraton Tara at Danvers and the Colonial Hilton at Wakefield – neither of these facilities offer much in the way of ambiance. There is an opportunity for joint community use of the golfing, tennis, swimming, and other recreational facilities that such a facility would offer. Such a center could function as a sort of country club for the community on the weekends, when corporate business is slow.

Acton's geographic position on the eastern side of Interstate 495 would give it a competitive advantage over the other two existing facilities, which are west of Route 495 and at least an hour's drive from Boston. The town's rail service from Boston and the potential of accessing the airport by train and subway is an added bonus. Other competitive advantages for hotel and resort facilities include proximity to major historical sites in Concord and Lexington, including Walden Pond and the Minuteman National Historic Park. The major competitors to such facilities in Boston's suburbs are conference centers in the established resort areas of Southern Maine, the Cape, and Newport within one hour's drive of Boston.

POTENTIAL ECONOMIC DEVELOPMENT TOOLS FOR PLAN IMPLEMENTATION

OVERVIEW OF FISCAL INCENTIVE PROGRAMS

Within the past two years, a significant amount of economic development legislation has been passed in Massachusetts. These laws authorize towns to use a number of incentive tools to encourage investment in areas of economic opportunity:

- Tax Abatements (including Tax Increment Financing)
- Special Assessments
- Betterment Bonds
- Business Improvement Districts (BID's)

TIF and Special Assessment incentives, as they are defined in the new state economic development legislation are very confusing. In other states, these programs offer innovative ways to raise funds for public improvements in support of redevelopment projects. In Massachusetts, however, these programs are actually tax abatement programs. Betterment Bonds and BID's, also authorized by the new legislation, are more similar to the true versions TIF and Special Assessments. These tools offer potential for financing of the costs of infrastructure and public amenities in connection with the Kelley's Corner district.

TAX ABATEMENT

Tax abatements for periods of 20 to 40 years are authorized under both Chapter 121C and the State's new Tax Increment Financing (TIF) legislation. According to the new state TIF legislation, any areas "presenting exceptional opportunities for economic development" can qualify for TIF, subject to the approval of the Secretary of Economic Affairs. A project does not have to be within an Economic Target Area to be eligible for TIF financing. As in other states, this legislation delegates most authority for decision-making authority on matters of local property tax concessions to the local level.

Massachusetts' TIF program differs considerably from TIF in other states in other respects, however. In Massachusetts, the TIF legislation allows municipalities to give partial or total tax abatements for up to 20 years. An investor receiving a tax abatement pays taxes only on the value of the property before he or she invested in it. If a developer receives a 100% tax abatement, then only the old value of the site or property will be taxable. The following example illustrates the potential benefit of tax abatement to an investor:

	Area	Value
Site	40 Acres	$1,600,000
Building	100,000 sq.ft.	$10,000,000
Value of Site before Development		$1,600,000
Amount of Investment in Improvements		$10,000,000
Commercial Property Tax Rate		$20.52 per $1000
Annual Taxes Payable (on Old Value)		$32,832
Taxes Exempt on New Improvements		$205,200
Net Present Value to Developer of Tax Savings Over 20 Years (@7.5%)		$2,091,910

The above illustration assumes that 100% of the improvements will be tax abated for the full 20 year term. Under the TIF program, however, municipalities are encouraged to grant partial abatements for varying lengths of time. For instance, 50% of the taxes can be abated for 10 years, and 25% can be abated for the next 10 years.

TIF differs somewhat from Chapter 121A (the Urban Redevelopment Corporations Law) which allows 40-year tax abatements and requires a lengthy public process, which can take up to six months. TIF plans must be approved by the Economic Assistance Coordinating Council (EACC) within the Massachusetts Office of Business Development, and must be adopted at town meeting.

In other respects, TIF in Massachusetts is strikingly similar to other forms of tax abatement. Full or partial tax abatements on investment in new improvements are available for up to 20 years. Under TIF, the assessed value of the property is "frozen" upon designation of a TIF Zone.

The "increment" resulting from the investment is fully or partly exempt from taxes for up to 20 years.

Only six TIF Plans have been approved so far in the state, principally in the Metro North and Metro South areas. These authorize partial property tax abatements of 33% to 100% for periods of 10 to 20 years.

Pros & Cons of Tax Abatement for Acton

Advantages:

- If the tax breaks are necessary to attract the company, then the community gains jobs and investment.
- In theory, no taxes are "lost", since the developer continues to pay on the base year value of the property. In practice, this is often not the case.
- Allows the town to compete for mobile investment.
- Varying tax exemption schedules allow flexibility in negotiating with developers; the abatement terms can be tailored to the needs of the project.

Disadvantages:

- Risk of foregoing revenues unnecessarily.
- Possible public opposition.

Pros & Cons of Tax Abatement for Developers

Advantages:

- A 20 year property tax break on an investment of $10 million would have a net present value of $2 million to a developer.

Disadvantages:

- Increased costs up-front & time delays up front for planning and legal work.
- The true value of the abatements is reduced by the deductibility of property taxes in calculating state and federal income and business taxes.

SPECIAL ASSESSMENTS

Like TIF, the term "Special Assessments" as used in Massachusetts' economic legislation is somewhat of a misnomer. In Massachusetts, special assessments are five-year tax abatements on

all or part of the total taxable value of a property. Special assessments differ from TIF which exempts only incremental taxes that would be payable on new improvements and allows abatement periods of up to 20 years.

So far, five special assessment projects have been approved in the State with five-year tax abatements on the total assessed valuation ranging from 50% to 100%.

The pros and cons of special assessments are the same as for tax abatements. Since the abatement period is shorter, special assessments generally are more favorable to the municipality than the developer, but this will vary with the terms of the negotiations. For example, a 100% abatement on total project values for 5 years can cost the city more than a 10% abatement on new improvements over 20 years.

BETTERMENT BONDS

It is possible, but not necessary, to use betterment bonds to finance "public projects"[19] in support of TIF projects. Betterment bonds are retired from payments in lieu of taxes, based on all or part of the incremental revenue. Betterment bonds are general obligation bonds, repayable at a tax-exempt rate of interest, they therefore offer a business low-interest partial financing for a project.

In most of the region's towns, developers have been required to finance these costs of public projects themselves at conventional rates of interest which can range up to 15%. Providing partial financing at tax-exempt bond rate of interest can represent a substantial value to a developer, as illustrated below:

	Area	Value
Site	40 Acres	$1,600,000
Improvements	100,000 sq.ft.	$10,000,000
Commercial tax rate		$20.52
Annual tax increment (value of improvements x tax rate)		$205,200
Amount of bond supportable by annual tax increment (at 7.5% over 20 years)		$2,091,910
Less cost of bond issue (4%)		-$ 83,676
Less debt service reserve fund		-$ 205,200
Net bond issue proceeds		$1,803,034

[19] "Public projects" are defined as infrastructure construction projects like sidewalks, streets, environmental works, and mass transit improvements.

Thus, up to 18% of the $10 million project cost could be financed by betterment bonds at a low municipal tax-exempt rate of interest of around 7.5%. Conventional rates can range up to 15%. The following illustrates the potential value of the interest savings to the developer over 20 years under the same assumptions as appear above:

Present Value of Savings on Financing Costs Over 20 Years

Net proceeds of 7.5% betterment bond	$1,803,034
Present value of annual payment of $205,200 at 12.5% interest	$1,485,926
Value to developer of 20-year interest savings	$ 317,108

Annual Value of Savings on Financing Costs

Annual payment on $1,803,034 over 20 years at 12.5%	$ 248,991
Annual TIF payment (7.5% interest)	$ 205,200
Annual interest savings	$ 43,791

A betterment bond of $2.5 million is worth about $317,000 in interest payment savings on a $10 million project over the 20 year period, or about 3% of total project costs. A developer opting for betterment bond financing gets both the benefit of tax abatement ($2 million in the TIF example) plus the value of the partial financing at 12.5% ($317,000) for a total value of nearly $2.3 million.

The value of the interest savings of partial project financing has apparently not been grasped by investors in Massachusetts yet. So far, none of the 11 TIF and special tax assessments approved in Massachusetts have included provisions for betterment bonds.

BUSINESS IMPROVEMENT DISTRICTS

Municipalities are authorized to create Business Improvement Districts where they can levy an additional charge over and above the property tax to pay for special services and improvements to the business district. In other states, the BID concept been most successfully applied to declining retail districts.

A BID is created by a petition initiated by property owners within the District. At least 60% of the property owners must support the BID petition. Upon receiving the petition, the municipality holds a public hearing and enacts an ordinance establishing the BID. Any business in the area that objects to the BID charge can obtain an exemption from it. BID levies are usually levied on a square footage basis.

BID offers a stable, flexible source of revenue that is well suited to meeting management and security, maintenance and other operating costs downtown. It has the disadvantage of imposing an additional tax on an area which is struggling to survive in very soft market conditions.

RECOMMENDED IMPLEMENTATION STRATEGY FOR ACTON

OBJECTIVES

Acton has a number of locational and demographic advantages that have underpinned the strong performance of the local economic base and real estate market. The private market has and is expected to continue to function well. Both market demand and property supply conditions are optimal. Thus, a major economic development strategy is not warranted.

The community's major concern is its tax base which, with the constraints imposed by Proposition 2 1/2, cannot keep pace with the growing demand of maintaining a first-class school system.

An area of equal concern is Acton's image as tarnished by the type of development in the Kelley's corner area. Transforming this area into a more traditional town center, as is proposed in this document, will support higher property values, strengthening the town's psychological associations with affluent Rt. 128 communities such as Concord, Lexington, Weston, and Wellesley.

Acton is a strong locus for two types of investment:

- Existing Firms: Expanding high-growth technology-intensive "gazelle"-type firms, many of whom have left the community and its environs for cheaper locations on the North shore.

- Indigenous investments: The highly-educated labor pool in and around Acton offers a fertile seedbed of local entrepreneurs, many of whom will prefer to work near home.

STRATEGY TO ACHIEVE OBJECTIVES: DEVELOPMENT INCENTIVES

The town needs two things:

(1) Property taxes. The strong market for undeveloped sites in Acton will support unsubsidized development of the large supply of such sites. This will continue to contribute to property tax revenues.

(2) Incremental, but pervasive upgrading and redevelopment of ugly, sprawling box and strip retail uses in Kelley's Corner. This will not happen without incentives to property owners.

At present, commercial properties in Kelley's Corner are more or less fully-occupied. Rents are limited to market rate and owners have little incentive to upgrade. Redevelopment is more time-consuming, complex, and expensive than "greenfield" (raw land) development. It will thus be necessary to provide incentives for redevelopment in the following ways:

(1) Density bonuses for investment, as is detailed in Sections 2 and 3.

(2) Tax abatement on all new improvements; existing taxable property values would continue to be fully taxable.

Although other options are available, straightforward tax abatement is the simplest and most effective subsidy to redevelopment. Betterment Bonds for site improvement are also available; these could be used in tandem with tax abatement but they involve expensive and complex bond issuing processes. The fiscal impact is the same under both programs.

We recommend that Acton abate revenues under Chapter 121C rather than under Tax Increment Financing (TIF), which is virtually identical in impact. The reasons for this are two-fold:

(1) Chapter 121C has been around a long time and administrative procedures are well-established. TIF is new and is thus likely to be more administratively challenging.

(2) TIF plans must be approved at Town Meeting. This is not required for Chapter 121C plans.

Tax abatements under Chapter 121C can be granted for a period of up to 40 years. Most abatements, for investment in Kelley's Corner should be granted for periods of five to ten years. Longer abatements could be considered for large and complex redevelopment projects.

Under Chapter 121C, taxes are abated on new improvement only. The owner continues to pay the same level of taxes on the assessed value before investment in a new project. It is important to remember that tax abatement are never a deciding factor in real estate investment decisions. However, when used in tandem with other incentives, like density bonuses, they exert a pronounced marginal "swing factor." Perhaps most important is their symbolic importance: they signify that the town is pro-business. This is important in a growing "edge city" like Acton that has stiff competition from other upscale suburban business centers in the metropolitan area.

STAFFING & IMPLEMENTATION

The Planning Department should designate a staff member as an part-time coordinator for Kelley's Corner. This staffing should be considered as part of a town-wide economic development position, with 50 percent of the individual's time devoted to Kelley's Corner. Alternatively, a part-time coordinator could be hired. Initial funding for the position could be sought through a Municipal Incentive Grant from the Massachusetts Executive Office of

Communities and Development; and long-term funding might be provided through establishment of a Business Improvement District (BID).

This designated coordinator would have the following responsibilities:

(1) Maintain liaison with the Chamber of Commerce.

(2) Establish and maintain outreach to businesses and property owners in Kelley's Corner by such means as periodic surveys. The Coordinator needs to:

- promote the recommended package fiscal incentives and density bonuses to property owners;
- identify expanding existing firms to assist them in finding expansion sites in Acton.

(3) Be responsible for coordinating the Chapter 121C process as established in the State Regulations.

(4) Maintain liaison with the commercial real estate agents operating in Acton. Make sure that they have details of all major development opportunities in the area, such as the Auto Auction Site.

(5) Promote the two large sites in the area directly to the industries that have been endorsed by the community.

(6) Maintain a detailed inventory of the supply of development sites in the region, making sure there is adequate commercial and industrial land to meet future demand, estimated at 17 to 20 acres per year for the next 10 to 20 years.

7. FISCAL IMPACTS

COSTS AND REVENUES OF COMMERCIAL AND RESIDENTIAL LAND USES

The relationships between the amount and type of development in a community and the costs of providing municipal facilities and services to serve that development are ambiguous and subject to a great deal of interpretation. In the course of preparing Acton's 1990 Master Plan, a fiscal analysis was conducted which in part consisted of a statistical analysis of the relationships between commercial and residential development levels in eastern Massachusetts communities and the corresponding residential tax rates. The conventional wisdom is that additional commercial development "broadens the tax base," that is, it spreads the cost of services to residences over a wider base and thereby benefits residents by reducing their individual tax burdens. Underlying this assumption is the recognition that commercial and industrial land uses do not directly impose educational costs, which are by far the largest component of most municipal budgets. While it is true that they may indirectly induce such costs by increasing the demand for housing in proximity to job opportunities, in a mobile society in a metropolitan area, these induced educational costs are assumed to be minimal because the individual community has the ability to use zoning to promote uses deemed to be fiscally positive (i.e., commercial and industrial) and limit the residential uses that are directly related to educational costs.

The study conducted in 1990 for the Town of Acton, however, found reason to question the conventional wisdom regarding the beneficial tax effects of increased commercial development. On the contrary, the study found neutral or weak positive relationships between commercial development levels and residential tax rates—that is, where any relationship at all was apparent, higher overall levels of commercial development (as measured in terms of percentage of the total valuation in the community) were associated with higher residential tax rates. It is easy to see why this might be the case. All other things being equal, a high level of commercial development will bring more traffic and visitors to a community, increasing costs associated with public safety and public works. A higher, more "urban" level of infrastructure will be required—for example, roads may need to be built wider and to higher standards, street lighting may need to be upgraded, traffic signals may be required, etc. In addition, there are well-recognized changes in the characteristics of a community's population that accompany increased levels of development. As the community becomes more integrated into a regional economy, it becomes more difficult to sustain a volunteer fire department, and the community may therefore shift to a full-time, professional department; and new residents attracted to an area by jobs and services, begin to demand the higher level of services that they may have been accustomed to in their previous area, increasing the costs of schools, libraries and health services. As a result of all these factors, it appears that *over the long run*, the effect of increased commercial development on residential tax rates may be neutral or may tend to increase those tax rates.

In the short run, however, it is clear that the fiscal impacts of commercial development are "positive, " while the fiscal impacts of residential development are "negative." That is, given

an existing mix of uses in a community and an existing distribution of property tax revenues among residential and nonresidential uses, commercial and industrial uses will tend to pay more in taxes than they demand in services, while residential uses will tend to cost more to a town than they generate in revenues. This relationship is illustrated in Acton in the following table, which suggests that each commercial parcel in the community generated $0.88 more in FY 1988 tax revenues than it costs the Town in services, while each residential parcel costs the Town of Acton $0.41 more than it generates in tax revenues.[20, 21]

	Residential	Commercial	Industrial
Total Value per Category	$1,157,289,900	$194,466,463	$82,109,700
Value per Parcel	$175,267	$607,708	$789,516
Tax Rates	$16.88	$18.51	$18.51
Total Tax Revenue	$19,535,054	$3,599,574	$1,519,851
Average Annual Tax Revenue	$2,959	$11,249	$14,614
Ave. Tax Revenue adjusted by splitting Personal Property taxes between Commercial & Industrial parcels	$2,959	$11,703	$15,068
Average Annual Local Costs per Parcel	$4,162	$1,393	$1,393
Average Annual Net Revenue or Cost	($1,204)	$10,310	$13,676
Cost per Dollar of Revenue Received	$1.41	$0.12	$0.09

Source: Mass. Department of Revenue data for FY 1988, and analysis by The LandUse Collaborative

Care should be taken in the interpretation of this analysis for a number of reasons, not least of which is the fact that the data are analyzed on the basis of tax parcels, which cannot be directly translated into units of development. For example, a residential parcel may have a single-family unit on a minimum zoning lot, or it may have a single unit on a large estate with considerable amounts of accessory land. Both parcels would have essentially the same demand for public services and therefore would incur the same costs to the town, but might generate very different levels of tax revenues. Also, it is not possible from this level of analysis to distinguish large commercial parcels from small ones (e.g., a shopping center from a small freestanding store), or a high value use from a lower-value one. Nevertheless, being based on average

[20]The cost allocations in the above table are based on an analysis conducted by The LandUse Collaborative using Fiscal Year 1993 data from the Massachusetts Department of Revenue.

[21]It should be emphasized that this table presents a short-term analysis based on existing conditions. Obviously, if a community had no commercial or industrial development, the analysis presented here would result in a break-even position for residential land uses: that is, the costs of services provided to residential land uses would exactly equal the revenues generated by those uses, since there would be no other source of revenues to support the residential side. It is not clear from this analysis, or any other of which we are aware, that the tax burden on residences in such a situation would be any higher than the tax burden on a residence in a similar size community with a substantial amount of commercial development. Therefore, it would be a mistake to generalize from this analysis that commercial development is necessary over the long run to reduce the costs to residents of municipal facilities and services without further qualification as to the quality or level of services being demanded by residents and provided by the community.

existing parcel characteristics, the analysis is useful in presenting an approximation of the relative costs or revenue attributable to the existing mix of parcels in the Town.

FOCUSING IN ON KELLEY'S CORNER

The preceding section has described the fiscal impacts, in terms of service and facility costs and property tax revenues, of various land uses in the Town of Acton given the current land use mix and taxation policies. The next step in this fiscal impact analysis is to look more closely at the specific tax revenue implications of proposed zoning changes in the Kelley's Corner Planning Area. To do this, we have reviewed typical valuations for various classes of land use (residential, retail, office, industrial), both within the planning area and, for comparison, in Nagog Park. The following table summarizes this information.[22]

	Average Land Value Per Acre	Average Building Value Per Square Foot	Average Total Value Per Acre
Kelley's Corner			
–Industrial	$110,403	$25.76	$153,758
–Commercial	$212,148	$46.78	$211,045
–Residential	$145,064	n.a.	$181,894
Nagog Park			
–Industrial	$98,154	$35.82	$358,139
–Commercial	$102,952	$43.53	$393,422

This comparison suggests that, at present, commercial land uses represent a higher total value per acre in the Kelley's Corner area than residential uses, but that the few industrial uses have somewhat lower average values. Both commercial and industrial uses in Kelley's Corner appear to have lower valuations than in Nagog Park, which represents the type of light industrial area that would be supported by participants in the planning process.

A order-of-magnitude estimate of the increased tax revenues that might be generated by additional development under the recommended land use plan can be made by multiplying the current average building values per square foot in the Kelley's Corner area (from the above table)[23] by an estimate of the amount of new floor area that could be developed over a period of

[22]Note: The Kelley's Corner database was assembled by modifying the existing Assessors database and combining some parcels that are in common use and ownership (for example, the two or more parcels that make up the K-Mart/McDonalds site); as well as splitting some parcels that have different characteristics (e.g., the residentially and industrially zoned portions of the Haartz property). Therefore, the assessed valuations for the Kelley's Corner parcels are not strictly comparable to those for the Town as a whole.

[23]This analysis does not attempt to estimate the effects of different types of future land uses on valuation change and therefore on net fiscal impact to the Town. As noted in the Economic Development Strategy section

time. Section 6 presents the following estimates of future demand for commercial floor space in Acton between 1990 and 2020:

	Total Demand, 1990-2020 (sq. ft.)	Average Annual Demand (sq. ft.)
Industrial	454,497	15,149
R&D and Office	966,000	32,200
Retail	2,039,792	67,993

If the recommended land use plan is implemented, additional development potential will be created in the Kelley's Corner area, allowing the Planning Area to absorb some percentage of this potential growth. Assuming that new floor area is provided in Kelley's Corner to meet one-half of Acton's annual demand for Industrial and R&D/Office space, this will result in the following growth in floor area, valuation and property tax revenues to the Town over a ten-year period:

	New Growth (sq. ft.)	Value of New Growth	New Tax Revenues[24], [25]
Industrial	75,700	$1,950,000	$40,000
R&D and Office	161,000	$7,532,000	$155,000
	236,700	$9,482,000	$195,000

On the retail side, Kelley's Corner will probably not absorb as large a share of the Town's demand for floor space as for industrial, R&D or office uses. Although there is currently a strong demand for retail space in the region, the major component of this demand is for large stores rather than small-scale stores and upper-floor space. The total potential increase in Kelley's Corner retail center (i.e., Subarea A of the Planning Area) is about 500,000 square feet (884,200 build-out, less 381,100 existing); and the projected annual demand for new retail space in Acton is about 68,000 square feet. However, it is likely that retail space in Kelley's Corner will expand by an average of no more than 10,000 square feet per year over the next ten years. Based on current building valuations in the Planning Area, a 100,000 square foot increase in retail floor area over this period would correspond to a $4,680,000 increase in valuation, which would translate into a $96,000 increase in annual tax revenues.

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of this Plan, at any given time land will have a higher value for some uses than for others. For example, currently there is a much stronger demand for large-scale retail space than for office space, due to cumulative overbuilding of office space in the past decade or more. The Economic Development Strategy also notes that, over the long term, demand for office and other uses is expected to rise relative to demand for retail, and so this differential is likely to be reduced. Consequently, it makes little sense in a long-range plan such as this to attempt to quantify precisely the types of uses and their relative values.

[24]Equals increased annual tax revenues at the end of five years, based on the current commercial-industrial tax rate of $20.52 per $1,000 valuation.

[25]These estimates assume that the land is already being assessed for its commercial value, and therefore that no increase in the land component of the assessed valuation will occur as a result of increased development. This may be a conservative assumption. Also, no adjustment has been made for the change in land valuation resulting from the proposed rezoning of two parcels from residential to nonresidential use.

Thus, assuming total growth over a ten-year period of about 337,000 square feet of floor area for various types of nonresidential uses, the total nonresidential tax base could increase by about $14.2 million and annual property tax revenues by about $291,000. As indicated above in this section, it is estimated that commercial and industrial land uses in Acton are currently costing the Town between 9 and 12 cents for every dollar of property tax revenue produced. Assuming that the actual cost is as high as 20 cents per dollar of tax revenues, the net fiscal impact from this estimated development would be $232,800 per year ($291,000 * 80%) at the end of the ten-year development period.

ZONING AND ECONOMIC GROWTH

A remaining question is how much of this increased development would result from implementation of the recommended land use plan, and how much might occur anyway under the existing zoning. The existing zoning in the Kelley's Corner Planning Area allows for an additional 575,000 square feet of floor area, compared to the 337,000 square feet of development that has been estimated for the next ten years for the purpose of this fiscal impact analysis. Is it necessary to increase potential build-out in the Planning Area by an additional 1,065,000 square feet for the Town to derive the benefits of additional economic growth?

The answer to this question will depend on the strength of the demand for commercial space and on the business situations of individual property owners. Many of the key parcels in the retail center are already developed to levels that are close to, or in excess of, the maximum allowed by zoning. For those that are not, the only way to expand is often to replace an existing single-story structure with a taller building that has a smaller footprint, in order to provide the required parking spaces; but without a significant increase in permitted density there may be little incentive to do this. The estimated build-out under current zoning in such cases is not likely to be attained.

A different set of conditions exists outside the retail center. More than 95% of the potential nonresidential growth in the Office Park and Industrial districts under existing zoning (418,000 square feet out of 439,000 square feet) is at the Concord Auto Auction site. The recommended land use plan would: (1) increase buildout of the Auto Auction site by an additional 209,000 square feet; (2) add 225,000 square feet of buildout potential by rezoning the Piper Road site from residential to Office Park; and (3) provide an additional 105,000 square feet of buildout potential at the Modular and Data Instruments properties, which are currently at their buildout under existing zoning. Together, these changes expand the options for significant commercial development from a single site (the Auto Auction) to four parcels with a combined potential of about 960,000 square feet, and make the rate of development used in the above estimates much more likely.

8. OUTLINE OF IMPACT FEE SYSTEM

Mark Bobrowski, Esq.

As Acton considers an impact fee for the Kelley's Corner Planning Area, there are several legal issues to keep in mind. This section introduces the basic legal concepts pertinent to exactions, highlights specific concerns regarding impact fees, and suggests a basic approach to the development of an impact fee system.

INTRODUCTION

Traditionally, local governments have financed public services through general revenues and the issuance of general obligation bonds pledged against local property tax collections. However, the condition of the bond market and competition with other investment options has made marketing these debt instruments more difficult. The trend toward state-mandated limitations on bonded indebtedness has also encouraged municipalities to look at other avenues of revenue. The recent popularity of exactions is largely the result of these circumstances.

Exactions may take several forms, including required dedications of land or in lieu payments (usually as a part of the subdivision review process), impact fees, or linkage payments. Nationally, the earliest type of exaction occurred when the government sought land within a subdivision (or its cash equivalent) for parks and recreation, schools, or other amenities.[26] In Massachusetts, we did not adopt the model; such required dedications are prohibited by the Subdivision Control Act.[27] As a result, much of the legal analysis common to other jurisdictions surrounding the use of exactions simply does not exist in Massachusetts. There are only a few judicial decisions that touch on the subject.

There are two legal mechanisms available for the adoption of an exaction in Massachusetts. First, the exaction may be upheld if it is authorized by enabling legislation.[28] Obviously, this necessitates coordination with the municipality's delegation to the State House. It also requires that some forethought be exercised as to the scope of the potential exaction. The enabling legislation should anticipate the types of services to be targeted, the methodology of the exaction, and the procedural rules to be observed. Attached as an example is the proposed enabling act for Franklin, Massachusetts (Exhibit B), which was recently passed by the legislature and is currently awaiting the Governor's signature.

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[26]The Standard Planning Enabling Act, promulgated by the Commerce Department in 1928, provided for conditioning subdivision approval on the provision of streets, watermains, sewer lines, and other utilities.

[27]See G.L. c. 41, s.81Q (requiring just compensation for such action).

[28]Based on my telephone conversation with Assistant Attorney General Jonathon Abbott of April 5, 1995, enabling legislation is an absolute prerequisite. As the staff attorney charged with the review of local by-laws pursuant to G.L. c. 40, s. 32, Mr. Abbott has clearly stated his position.

Second, it is arguable that exactions may be implemented under certain provisions of the Zoning Act, in conjunction with the Home Rule Amendment.[29] For example, G.L. c. 40A, s.9 states that special permits may be awarded to increase density where, as condition of permit issuance, the applicant provides "open space, housing . . ., traffic or pedestrian improvements . . ., or other amenities."[30] The drawback to this approach is that the municipality must allow for some density as of right before the exaction is applied. It is also unclear whether the municipality is limited to an exaction in-kind (e.g., actual dwelling units set aside for affordable housing).

LEGAL TESTS FOR EXACTIONS

An exaction authorized by an act of the legislature must also comply with constitutional expectations. Courts in other jurisdictions have applied one of three distinct approaches to measure the connection between the exaction and the objectives of the government regulation. The loosest of these tests is California's "reasonable relationship" test. The exaction would be upheld by the court if its conditions have a reasonable relation to the public welfare, and the municipality has not acted arbitrarily.[31] As long as there is a general public need for the exaction, the reasonable relationship test is satisfied. Florida has pioneered a second, more stringent, test to assess exactions. The "rational nexus" test is probably the most widely accepted standard in other jurisdictions. The development must create a need to which the exaction bears some proportional relationship; once imposed, the exaction must actually be used to offset the impact of the particular development in a timely manner.[32] Finally, a third approach, the "specifically and uniquely attributable" test, employs a very stringent standard to assess exactions. The capital improvement must be necessitated directly by the development. Since virtually all improvements are forced by cumulative growth, the test acts to make exactions generally impermissible. This last test is used in only a few jurisdictions.[33]

In Nollan v. California Coastal Commission,[34] the Supreme Court was faced with a choice between these three competing approaches. At issue was a condition attached to a permit for the reconstruction of a beach house. The permit was hinged on the provision of an easement for the public to cross the waterfront lot, between a seawall and the high tide line. The commission

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[29]Article 89 of the Massachusetts Constitution.

[30]Acting on this authority, several towns, including Framingham, Waltham, Marblehead, Ashland, and Revere, have enacted impact fee provisions.

[31]See, e.g., J.W. Jones Co. v. City of San Diego, 157 Cal. Rptr. 580 (Cal. Dist. Ct. App. 1984).

[32]See, e.g., Home Bldrs. and Contractors Assn. v. Board of Palm Beach County Commrs., 446 So.2d 140 (Fla. Ct. App. 1983).

[33]See, e.g., Pioneer Trust & Sav. Bank v. Village of Mount Prospect, 176 N.E.2d 799 (Ill. 1961).

[34]483 U.S. 825 (1987).

asserted the authority to exact the easement by citing its regulation designed to promote access to the beachfront.

The Court noted that the imposition of an easement across private property for government use constituted a taking. Did the link between the exaction and the building permit alter this outcome? After all, the Court noted, the Commission could have simply denied the building permit. The key, obviously, was whether the condition "substantially advanced" a "legitimate state interest." For the Court, the answer was "No." However, the Court reached this conclusion only because the regulation was designed to promote access to the beach, and the easement enhanced access for those already on the beach. In short, the exaction failed all of the tests, because the Court could find no nexus between the easement and the regulation. Furthermore,

> the lack of nexus between the condition and the original purpose of the building restriction converts that purpose into something other than what it was. The purpose becomes, quite simply, the obtaining of an easement to serve some valid governmental purpose, but without the payment of compensation.[35]

The Court also suggested that it would apply heightened scrutiny in measuring land use regulations attacked as confiscatory.[36] As a result, the government would have to defend its regulations by showing more than a "fairly debatable" basis.[37]

Justice Scalia's opinion left considerable doubt as to the Court's constitutional expectations in the realm of exactions. These questions were addressed in Dolan v. City of Tigard.[38] Florence Dolan owned a 1.67 acre parcel in Tigard, Oregon, upon which she operated an electrical and plumbing supply store. A portion of her property lies within the 100-year flood plain. She proposed to double the size of her store, construct new space for complementary businesses, and expand the parking area, all consistent with the city's zoning scheme. The city granted the necessary permit, subject to the condition that Dolan must dedicate an additional 15-foot strip of land adjacent to the floodplain as a pedestrian and bicycle pathway. In defense of its decision, the city noted that customers of the store could utilize the pathway (thus improving traffic conditions on public ways), and that the construction plans would only add to the need for stormwater management. Dolan appealed the dedication requirements, asserting that the exactions were not related to the proposed development and thus constituted an uncompensated taking.

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[35]Id. at 837.

[36]Nollan, 483 U.S. at 834 n.3.1

[37]The "fairly debatable" standard is otherwise applicable in assessing local regulations. See, e.g., Sturges v. Chilmark, 380 Mass. 246, 256 (1980).

[38]114 S.Ct. 2309 (1994).

The Supreme Court squarely faced the choice of tests it had avoided in Nollan. The Court rejected the use of "generalized statements as to the necessary connection between the required dedication and the proposed development" as too loose a test; it described the specifically and uniquely attributable test as too stringent a standard.[39] The proper standard was characterized as "rough proportionality:"

> No precise mathematical calculation is required, but the city must make some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development.[40]

There is no doubt that "rough proportionality" is the same measure as the rational nexus test, despite some confusing language in the opinion. Moreover, the city, not the landowner, was assigned the burden of justifying its exaction. The Court ruled that Tigard's findings in support of the exactions fell short: "the city must make some effort to quantify its findings ... beyond ... conclusory statements."[41]

IMPACT FEES

An impact fee differs from the traditional subdivision exaction; instead of an outright dedication of land, a developer is charged a fee to pay for the capital improvements ostensibly caused by the development. Typically, impact fees address sewer, roads, water, and other public facilities. The developer is charged a fee based on a formula (for example, using the number of bedrooms, or the square feet of building footprint). The impact fee must be paid for the developer to obtain required permits. Unlike traditional exactions, impact fees can be tied not only to subdivision approval, but to zoning and other necessary permits.

Impact fees are clearly a popular form of exaction, although the device has yet to catch on across the eastern United States. A recent survey of 1000 communities from across the country (with 220 local governments in 46 states responding) revealed some interesting aspects of the trend.[42] Of the respondents, 65.9% have some type of formal policy regarding on-site development exactions; a smaller number (39.6%) had formal policies for off-site exactions or impact fees (36.4%). When factoring in those communities that impose impact fees on a case-by-case basis, the study concluded that 45.4% of the respondents imposed impact fees. In a separate survey conducted by Builder Magazine, 43.2% of home builders nationwide reported that they paid impact fees. In the West, the figure was set at 64.8%; in the East, the number slipped to

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[39]One commentator has likened the Court's approach to Goldilock's in the famous fairy tale.

[40]Id., at 2319-2320.

[41]Id., at 2322.

[42]This information is distilled from Gus Bauman and William H. Ethier, Development Exactions and Impact Fees: A Survey of American Practices, 50 Law & Contemp. Probs. 51 (1987).

26.5% an indication that impact fees have yet to take strong root in this region. Interestingly, the typical impact fee is imposed by a suburban community, with 50.7% of all such systems reported by such towns, with the rest somewhat equally split between urban and rural communities.

Now that the Supreme Court's general expectations regarding exactions have been set forth in Dolan, some constitutional parameters can be established for valid impact fees. First, the Massachusetts courts have focused on whether the proposed fee constitutes an impermissible tax. The leading case on point is Emerson College v. City of Boston.[43] The Supreme Judicial Court reviewed Boston's attempt to impose a charge against certain buildings that, because of their size and other characteristics, required "augmented" fire services. The college, of course, was tax-exempt. Therefore, Emerson claimed that the charge constituted an unconstitutional tax, rather than a fee.

The court announced a three-pronged test to distinguish a fee from a tax:

(1) Fees are charged in exchange for a particular government service which benefits the party paying the fee in a manner not shared by other members of society;

(2) Fees are paid by choice, in that the party paying the fee has the option of not utilizing the government service and thereby avoiding the charge;

(3) Fees are collected not to raise revenues but to compensate the government entity providing the services for its expenses.[44]

Since the benefits of the charge were not limited to the owners of the buildings, but attached to the general public, the court held that the Boston scheme was a tax in violation of the state constitution. Most important, the court noted that where "revenue obtained from a particular charge is not used exclusively to meet expenses incurred in providing the service but is destined instead for a broader range of services or the general fund, 'while not decisive, is of weight in indicating that the charge is a tax.'"[45]

The Emerson College criteria have been used to hold at least two attempts at land use impact fees invalid in the lower courts of the Commonwealth. In Northeast Builders Association of Massachusetts v. Town of Dracut,[46] the town's by-law assessing a $2000 charge for each new unit of construction was held to constitute an unconstitutional tax. The judge noted that no explicit authority exists enabling such impact fees. Furthermore, the charge violated virtually

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[43]391 Mass. 415 (1984).

[44]Id. at 424-425.

[45]Id. at 427 (citations omitted).

[46]Case No. 87-6222 (Middlesex Super. Ct. 1988).

all of the Emerson College criteria. It was not levied for a particular public service, nor was it a voluntary payment; it was deposited in the town's general revenue fund, not a particular, earmarked account.

In Molla v. Town of Franklin,[47] the court examined the town's sewer lift fee. The by-law provided for a payment to the town of $100,000 for the maintenance of each lift station required by the sewer commissioners. After reviewing the Emerson College criteria, the court held that the sewer lift fee failed the test on at least two grounds. First, some lift stations were oversized to allow other users to benefit. Second, the charge appeared to the court to be a general revenue measure, because of its high dollar amount. Since all lift stations, regardless of their size, were to be charged the same fee, the court held that no nexus existed between the fee and the government service. The charge failed as an unconstitutional tax.

Nonetheless, there are several instances of fees (but not impact fees) held valid by Massachusetts courts, including charges levied against landlords petitioning a board for individual adjustments in rent control,[48] mooring fees levied against boat owners,[49] and hook-up charges for the supply of electrical service.[50]

The judicial review of impact fees in Massachusetts has pursued this fee/tax dichotomy in every instance since Emerson College. In other jurisdictions, while the fee/tax issue is important, once resolved it is the nexus between the fee and the government purpose that becomes the key question. The court, elsewhere, checks to be sure that the fee is not arbitrary or unreasonable. California's "reasonable relationship" test, Florida's "rational nexus" test, and the Supreme Court's "rough proportionality" test are simply different thresholds to measure arbitrary government impositions.

Second, the Massachusetts test for a fee/tax must be reconciled with Dolan's "rough proportionality" requirements. In Massachusetts, a fee that fails the Emerson College test is an unconstitutional tax, not an unconstitutional government exaction. However, a careful look at the Emerson College criteria indicates that the difference in semantics is largely unimportant. There is little doubt that Emerson College closely adheres to Florida's rational nexus test, with regard to the requisite connection between the fee and the government service. Towns must pay particular attention to the court's instruction to use revenue obtained exclusively to meet the expenses incurred in providing the government service. This is essentially the third prong of the Emerson College test and the heart of the Dolan analysis.

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[47]Misc. Case No. 129682 (Land Ct. 1989).

[48]See Southview Coop. Hous. Corp. v. Rent Control Bd. of Cambridge, 396 Mass. 395 (1985).

[49]See Commonwealth v. Caldwell, 25 Mass. App. Ct. 91 (1987).

[50]Bertone v. Department of Public Utilities, 411 Mass. 536 (1992).

More troublesome is the insistence in Massachusetts that the fee also satisfy the other prongs of Emerson College: that the payment of the charge be voluntary, and that the fee benefit the payer, not the general public. To the extent that the courts display a willingness to treat these prongs of the test in a flexible manner, Emerson College does not differ significantly from the Florida test. This tendency has recently emerged. For example, in Berry v. Town of Danvers,[51] the Appeals Court noted that "the second criterion in the Emerson College decision is arguably only subsidiary to, and an additional manifestation of, the analytically more comprehensive first factor, particularized private rather general public benefit." Berry suggests that the superficiality of the mandatory/voluntary distinction has been rendered moot. Instead, the court must look to the nature of the benefit resulting from the fee.

There exists an adequate body of case law from other jurisdictions using the "rational nexus" test to predict the type of impact fee likely to pass muster in Massachusetts. The next sections highlight that material pertinent to the objectives of a by-law in the Kelley's Corner area: road and sewer improvements.

IMPACT FEES FOR ROADS

In the earlier referenced survey, 30.8% of the respondent communities with impact fees imposed such fees for road improvements.[52]

Generally, impact fees for road improvements are calculated based on trip generation. A typical ordinance was examined in F&W Associates v. County of Somerset.[53] The ordinance established a "Transportation Improvement District" (TID), and a methodology for calculating each development's pro-rata share of the cost of necessary improvements based on the number of trips generated by that development.[54] The developer claimed that the charge was imprecise and disproportionate. Applying the rational nexus test, the court rejected this argument:

> It cannot seriously be argued that a municipality must compute with precision to what extent improvements to an off-tract road network are a "direct consequence" of a residential or office development. What must be demonstrated is a "rational" nexus, not mathematical certainty. For example, the assessment should not be invalidated because there may be a residual benefit conferred to the general public in its use of the off-tract road improvement. An assessment is subject to challenge only if the developer is required to pay a "disproportionate

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[51]34 Mass. App. Ct. 507, 512 n.6 (1993).

[52]See note 60 for figures regarding other types of impact fees.

[53]648 A.2d 482 (N.J. Super. Ct. 1994).

[54]Trip generation information may be acquired from the ITE Manual.

share of the cost of improvements that also benefit other persons. (citations omitted)

Similar results have been reached in other states adhering to the rational nexus test.[55]

Among the other factors important to courts reviewing impact fees for road improvement are:

1. Whether funds collected are restricted to a precise zone, each with its own trust fund;[56]

2. Whether estimated road improvement costs have been based on detailed study of problem traffic areas, suggested corrective changes, and the cost of construction of these identified roadway improvements.[57]

3. Whether, in assessing the impact fee, the permittee has been credited with funds paid into other accounts for necessary permits, where such accounts are used to fund road improvements.[58]

Another important consideration to keep in mind in devising an impact fee by-law for road improvements is the Appeals Court's ruling in V.S.H. Realty, Inc. v. Zoning Bd. of Appeals of Plymouth.[59] The town mandated, as part of a special permit decision, improvements to a state-numbered highway. The court held that the condition was beyond the powers of the town in that the Massachusetts Highway Department controls state-numbered highways. V.S.H. suggests that a town impact fee by-law may be limited to the funding of improvements for town or county ways.

It must be noted that the Massachusetts Highway Department has detailed rules for the administration of its access permit program. The powers of the department are far-reaching; it may condition an access permit to facilitate safe and efficient traffic operations, to mitigate traffic impacts, and to avoid or minimize environmental damage during the construction period and throughout the term of the permit. Such conditions may include, but not be limited to:

a. necessary limitations on turning movements;

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[55]See, e.g., Lampert v. Town of Hudson, 612 A.2d 920 (N.H. 1992); New England Brickmaster v. Town of Salem, 582 A.2d 601 (N.H. 1990); Home Builders and Contractors Association of Palm Beach County v. Palm Beach County, 446 So.2d 140 (Fla. 1983); County of Du Page v. RWS Development, Inc., 643 N.E.2d 242 (Ill. 1994).

[56]See, Home Builders and Contractors Association of Palm Beach County v. Palm Beach County, 446 So.2d 140, 142 (Fla. 1983).

[57]New England Brickmaster v. Town of Salem, 582 A.2d 601, 602 (N.H. 1990).

[58]F&W Associates v. County of Somerset, 648 A.2d 482, 484 (N.J. Super. Ct. 1994).

[59]30 Mass. App. Ct. 530, 535 (1991).

b. restrictions on the number of access points to serve the parcel;

c. vehicle trip reduction techniques;

d. necessary and reasonable efforts to maintain existing levels of service;

e. design and construction of necessary public way improvements by the permittee; and

f. reimbursement by the permittee of costs of inspection of improvement work.

The Town of Lincoln recently modified its curb cut by-law to take on exactly these powers in the local regulation of access permits to town or county ways. The Lincoln By-Law (appended hereto) provides another alternative to gain road improvements. Town meeting approved the by-law in late March, 1995.

IMPACT FEES FOR SEWERS

In the earlier referenced survey, 36.6% of the respondent communities with impact fees imposed such fees for sewer facilities.[60]

Generally, impact fees for sewer improvements are calculated based on the amount of water consumption of the premises, adjusted for type of use. A typical ordinance was examined in Hotel Employers Association of San Francisco v. Gorsuch.[61] The city established a sewer charge based on the amount of incoming tap water delivered to each user. The charge was calculated on the assumption that 90% of all incoming tap water was returned to the sewer system; the fee was adjusted according to the strength of the discharge normally associated with different categories of users. The court upheld the charge as founded on a rational basis.

Several Massachusetts decisions are helpful in analyzing the issue of fees for sewer services. In Town of Winthrop v. Winthrop Housing Authority,[62] the Appeals Court upheld the town's annual charge for use of the town's common sewer system, which was based upon a percentage of yearly metered water consumption. The fee was designed to cover the cost of annual operation and maintenance of the system and any assessment from the MWRA.

More importantly, in Berry v. Town of Danvers,[63] the Appeals Court reviewed Danvers' municipality's sewer connection fee. The fee targeted new connections or changes to existing

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[60]This made sewer impact fees the most prevalent type of impact fee: other purposes included water facilities (33.5%), roads (30.8%), parks and recreation (30.8), schools (13.5%) and other purposes (34.6%).

[61]669 F.2d 1305 (1982).

[62]27 Mass. App. Ct. 645 (1989).

[63]34 Mass. App. Ct. 507 (1993).

connections, and was set at $4.00 for each gallon of sewage estimated to be discharged daily. The fee was based on an estimated cost of $2.00 to remove each gallon of infiltration inflow (which has seriously overburdened the existing system) and $2.00 to cover the other aspects of system operation. The fee was ruled an unlawful tax. The Appeals Court held that the benefits of the sewer enhancement program were not particularized to the new connectors charged with its cost, that the charge was mandatory rather than optional, and that the payments were not earmarked for the purpose of accommodating new connections.

The court did, however, point to a useful model. In Bertone v. Department of Public Utilities,[64] the electrical hook-up charge levied against new customers was upheld by the Supreme Judicial Court. The hook-up charge was

> an amount that reasonably relates to the incremental cost of the additional facilities needed to provide them with service ... [and] paid 'for only those improvements to the system ... necessitated by the new customers, and hence ... will benefit them alone, and the remaining improvements are paid for by rate increases imposed on all customers.[65]

Bertone suggests that a sewer impact fee for an entirely new district would be upheld as long as these factors are carefully observed.

CONCLUSION

From a general perspective, Acton should consider the following factors in developing an impact fee by-law for the Kelley's Corner Planning Area:

1. The impact fee should be authorized by special legislation.
2. The procedures used to adopt the by-law must be consistent with the state enabling act.
3. The terms used in the by-law must be adequately defined and not ambiguous.
4. The substance of the local impact fee by-law (targeted improvements, payment schedules, appeal mechanisms, etc.) must be consistent with the enabling legislation.
5. The by-law should provide payers a right to appeal the application of the by-law to its development because of unique site characteristics. If an appellate procedure is allowed, an adequate process must be defined to satisfy due process requirements.

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[64]411 Mass. 536 (1992).

[65]Id., at 546.

6. The town must adequately document the estimated costs of acquiring and constructing the capital facilities and the inventory of deficiencies identified in existing capital facilities.

7. The formula or methodology devised by the town to determine the proportion of the need caused by the new development must yield a "roughly proportional" result.

8. The funds collected must be specifically earmarked and segregated into a separate fund to ensure that they are used only for the purposes for which they were collected, thereby benefitting the development paying the fee.

9. The actual expenditures must be localized by zone or trust fund district in order to ensure that payers or their successors in interest will actually and substantially benefit from the facilities they are being required to fund.

10. The funds exacted must be spent for earmarked purpose within a reasonable period of time (3-8 years) or be returned to the payer.

11. The by-law should award a credit to the payer for other payments, such as property taxes, license fees, fuel taxes, and other expenditures, in order to avoid being construed as "double taxation."

12. The fees should not exceed the costs needed to provide the new facilities.

EXHIBITS

EXHIBIT A

Summary of Vehicular Trip Generation Analysis
(Daily vehicular trip ends)

Area	Land Use	Existing	Existing Zoning Build-Out	Revised Zoning Build-Out
Subarea A	Residential	480	510	770
	Non Residential	21,120	28,290	48,700
	Total All Land Uses	21,600	28,800	49,470
Subarea B	Residential	490	1,060	1,060
	Non Residential	2,710	2,840	2,840
	Total All Land Uses	3,200	3,900	3,900
Subarea C	Residential	30	520	170
	Non Residential	4,910	9,750	13,680
	Total All Land Uses	4,940	10,270	13,850
Subarea D	Residential	10	310	20
	Non Residential	6,950	7,050	7,850
	Total All Land Uses	6,960	7,360	7,870
Total Study Area	Residential	1,010	2,400	2,020
	Non Residential	35,690	47,930	73,070
	Total All Land Uses	36,700	50,330	75,090

Important Notes:

The figures in this table*do not indicate the volume of existing or future traffic* in the Kelley's Corner Planning Area. Rather, they are estimates of *daily vehicular trip ends* based on average trip rates for broad categories of land uses, and should be used *only* as order-of-magnitude indications of traffic impacts from future development in the Planning Area.

A "trip end" is an arrival at or a departure from a site: thus, every trip has at least two "trip ends," but it may have many more. For example, a driver might make stops at the supermarket, dry cleaners and gas station on his or her way home from work—this would count as eight "trip ends" (one leaving work, two for each stop along the way, and one arriving at home), even though the vehicle might appear only once on any given stretch of road. In such a case, the "traffic" resulting from the trip (measured, for example, at the intersection of Main St. and Massachusetts Ave.) would be only one-eighth of the number of trip ends; and using the latter measure as an estimate of traffic volume would drastically overstate the traffic impact.

It is not possible to quantify the impacts of additional development in the Planning Area without undertaking an extensive study of travel behavior in the planning area (e.g., origins and destinations; and distribution of through traffic vs. local traffic).

EXHIBIT B

HOUSE.....No. ____

By Mr. Valles of Franklin, petition of the Franklin Town Council relative to an impact fee for the city of the Town of Franklin Local Affairs. [Local Approval Received]

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Ninety-Five

An Act Relative To Impact Fees For The Town of Franklin.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Purpose and Findings - The city of the Town of Franklin is undergoing a period of substantial growth. This growth has resulted in numerous direct and indirect impacts on the city and its ability to adequately address those impacts due to its influx of population. The city has experienced development related impacts requiring capital improvements to school facilities attended by children of new residents; accelerated deterioration in the level of service of its streets and roadways; increased stress on city facilities and infrastructures such as water and sewer lines; and an increased need for capital improvements to its municipal buildings and recreational facilities. Development related impacts must be paid for by fair share exactions from developers so that the city can provide adequate services and infrastructure to support future development.

SECTION 2. Establishment of an Impact Fee By-Law -

A) The Franklin Town Council may, by a general by-law, require the payment of an impact fee as a condition of approval of a development impact project plan, as defined by the by-law, for any future development within the jurisdiction of this act. The impact fee shall only be imposed on the construction, enlarging, expansion, or substantial rehabilitation of projects. The by-law shall be used solely for the purposes of defraying the costs of capital improvements caused by and necessary to support future development such as, but not limited to the following; capital improvements to school facilities, public facilities, roads, drainage, sewers, water, public safety facilities,parks, playgrounds and other recreational facilities.

B) The impact fee by-law may be enacted if the following criteria

are met:

1) A rational nexus shall be established that shows the relationship between the creation of new units and their impact on the following services including, but not limited to school facilities, public facilities, roads, drainage, sewers, water, public safety facilities, parks, playgrounds and other recreational facilities.

2) The city shall develop and prepare a study that evaluates existing capital improvement plans for public facilities. The study shall analyze potential build-out in the city, the impacts of future development and the need for public facility improvements as a result of future development. Any impact fee which may be established pursuant to this act shall be set in accordance with the methodology set forth in the study.

3) The impact fee shall be established on the basis of the cost projections in the capital improvement plans and study as described in section 2(B)(2) and the expected level of development.

4) The city shall have the authority to create a distinct and separate account for each impact fee enacted by the city for the services delineated in section 2(B)(1) in order to make improvements made necessary by and resulting from future development. Interest earned shall be credited to each impact fee account. No expenditure shall be made from each impact fee account without appropriation by the Franklin Town Council. No impact fee shall be paid to the city's general treasury or used as general revenues subject to the provisions of M.G.L. c. 44 §53.

5) The level of any impact fee shall be reviewed at least every three (3) years and reset as required based upon the recommendation of the Town Administrator.

SECTION 3. This act shall take effect upon date of passage.

EXHIBIT C

ARTICLE . TO SEE IF THE TOWN WILL VOTE TO AMEND ARTICLE XI OF THE TOWN OF LINCOLN'S GENERAL BY-LAWS BY DELETING SECTION 3(c) IN ITS ENTIRETY AND ADDING A NEW SECTION 6, AS FOLLOWS:

Section 6. Public Way Access Permits.

A. Purpose. It is the purpose of this by-law to provide for the review of public way access permit applications to provide for predictable, timely, and uniform procedures and public safety. These procedures apply to public way access permit applications for:

1. new access to a public way;

2. physical modification to existing access to a public way;

3. use of new or existing access to serve the building or expansion of a facility that generates a substantial increase in or impact on traffic from properties that abut the public way.

B. Definitions. In this By-Law the following terms shall have the meanings prescribed below.

1. "Modification" shall mean any alteration of the physical or traffic operational features of the access.

2. "Substantial increase or impact on traffic" shall mean that generated by a facility which meets or exceeds any of the following thresholds:

    a. Residential, including hotels, motels, lodging houses and dormitories: Any increase to the existing certificate of occupancy of more than 25 persons

    b. Nonresidential: 250 trips per day, as defined in the ITE Trip Generation Manual, 4th ed.

    c. Nonresidential: 25 new parking spaces

    d. Nonresidential: 5,000 new square feet

C. Submittal of Permit Application. The Board of Selectmen shall be responsible for the issuance and/or denial of public way access permits. A permit applicant shall request issuance of a permit on a standard form supplied by the board of selectmen. A permit application shall be deemed complete by the board of selectmen only after the following items have been submitted:

1. standard application form;

2. evidence of certification of compliance with MEPA by the Executive Office of Environmental Affairs of the Commonwealth, if necessary;

3. engineering plans acceptable to the board of selectmen, where required by the board.

The Board of Selectmen, by regulation, may adopt a schedule of reasonable fees to accompany said application.

D. Procedures of the Board of Selectmen.

1. Any application for a public way access permit, other than an application pertaining to a single-family residential structure, shall be transmitted by the board of selectmen within three (3) working days to the planning board for review and comment. The planning board shall, within twenty (20) days of receipt of the application, report to the board of selectmen in writing its findings as to the safety of the proposed activity and, in the event of a finding that the proposed activity would be unsafe, its recommendations, if possible, for the adjustment thereof. Failure by the planning board to respond within twenty days of the receipt of the application shall be deemed lack of opposition thereto.

2. Where an application is deemed complete, the board of selectmen shall render a decision within the following timetable, by filing same with the Town Clerk:

   a. For an application pertaining to a single-family residential structure: twenty (20) days;

   b. For any other application: forty (40) days.

   Where the board of selectmen denies said application, it shall state specific findings for the denial in its decision.

E. Powers of the Board of Selectmen.

1. The board of selectmen may deny the issuance of a public way access permit due to the failure of the applicant to provide sufficient highway improvements to facilitate safe and efficient highway operations, or when the construction and use of the access applied for would create a condition that is unsafe or endangers the public safety and welfare.

2. The board of selectmen may, in the alternative, condition an access permit to facilitate safe and efficient traffic operations, to mitigate traffic impacts, and to avoid or minimize environmental damage during the construction period and throughout the term of the permit. Such conditions may include, but not be limited to:

   a. necessary limitations on turning movements;

   b. restrictions on the number of access points to serve the parcel;

c. vehicle trip reduction techniques;

d. necessary and reasonable efforts to maintain existing levels of service;

e. design and construction of necessary public way improvements by the permittee; and

f. reimbursement by the permittee of costs of town inspection of public way improvement work.

3. Variance. Where site or access standards do not allow the proposed access to meet these standards, the board of selectmen may vary application of the design standards on a case by case basis, upon the finding that:

a. for either a private applicant or a governmental entity, where there are no reasonable available alternatives which would allow access in compliance with these standards. In this case, the applicant must commit to provide measures to mitigate impacts to traffic and operational safety, which the board of selectmen determines are necessary; or

b. as an alternative procedure for a governmental entity only, the variance is necessary to accommodate an overriding municipal, regional, or state public interest, including the avoidance or minimization of environmental impacts.

F. Access Permit Provisions.

1. Construction under the terms of a public way access permit shall be completed within one year of the date of issue, unless otherwise stated in the permit. The board of selectmen may extend the permit for an additional year, at the written request of the permittee, filed prior to the expiration of the original construction period.

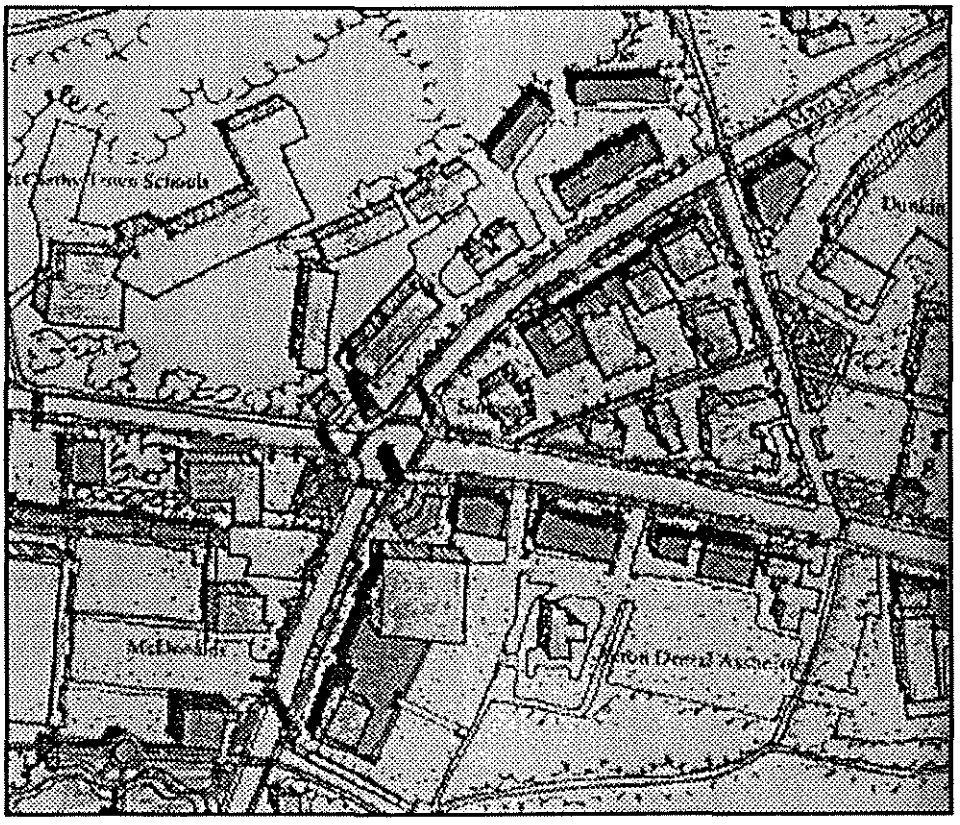
2. When the board of selectmen determines that a permit condition has not been complied with, it may suspend or revoke a public way access permit if, after notice to the permittee of the alleged noncompliance, twenty-four hours have elapsed without compliance.

3. The board of selectmen may require a performance bond to be posted by the permittee in an amount not to exceed the estimated cost of the work or $50,000.00, whichever is the lesser. The performance bond shall be posted prior to the issuance of the permit.

4. The board of selectmen may issue written orders to enforce the provisions of this by-law.

OR WHAT IT WILL DO IN RELATION THERETO.

KELLEY'S CORNER



SPECIFIC AREA PLAN

Appendix:
INVENTORY AND ANALYSIS REPORT

Prepared by

Acton Planning Department

Consulting Assistance Provided by

The LandUse Collaborative

June 1995

This project was funded by a Strategic Planning Grant awarded by the Commonwealth of Massachusetts, Executive Office of Communities and Development

KELLEY'S CORNER SPECIFIC AREA PLAN

INVENTORY AND ANALYSIS

If the Kelley's Corner Plan is to become a useful guide to future growth and development, it is important to understand where the Kelley's Corner Planning Area stands today. What are its resources, limitations, potentials and opportunities? What role does it play in Acton today? This section gives an overview or snap shot of the existing conditions in the Kelley's Corner Planning Area.

1. LOCATION

Kelley's Corner in Acton is generally known as the commercial center surrounding the intersection of Main Street (Route 27) and Massachusetts Avenue (Route 111). Acton is located 20 miles west-northwest of the City of Boston, Massachusetts. It is midway between Route 128 and Interstate 495, the two principal highways encircling the Boston metropolitan region (Figure 1). Route 2 leads through Acton. It is a major highway from Boston in a westerly direction and connects the north-central and western regions of the State with its capital. The Boston-Fitchburg commuter rail also services Acton with a stop in South Acton less than 1 mile south of Kelley's Corner. The Kelley's Corner Planning Area is in a favorable location within the region and the Town of Acton. Most of it is directly accessible via Routes 2, 27 and 111 (Figure 2).

The 0.9 square mile Kelley's Corner Planning Area comprises the Kelley's Corner business center, the adjacent regional school campus, and to the northwest an industrial area off Hayward Road (Figure 3). In the south, the Planning Area includes residential neighborhoods along Prospect and Main Streets and reaches to include the shopping center at the intersection of Prospect Street with Main Street. Toward the east, the Planning Area extends along the south side of Route 2 (including Route 2) across Piper Road to Hosmer Street.

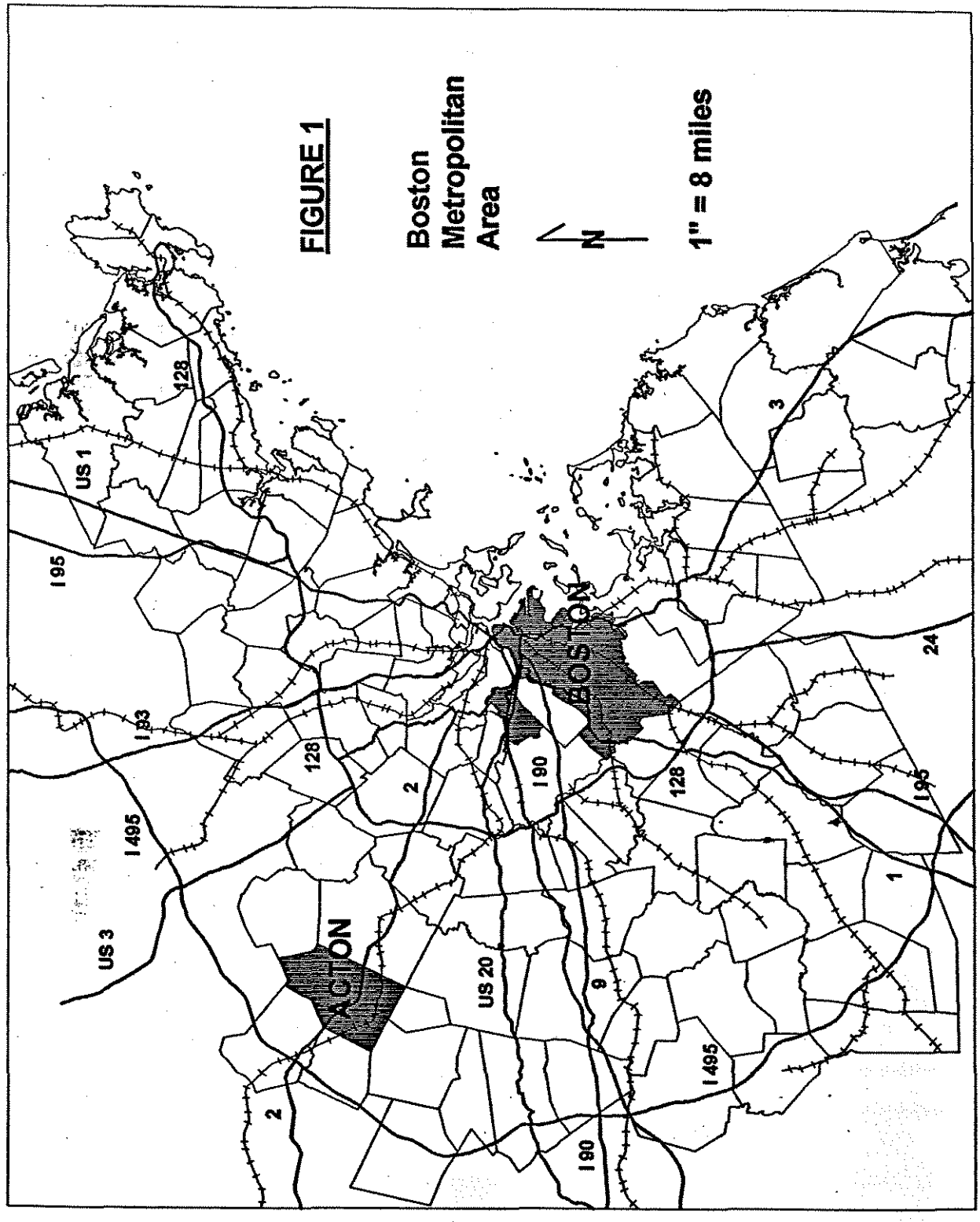


FIGURE 1
Boston
Metropolitan
Area
N
1" = 8 miles
BOSTON
ACTON
I 95
US 1
128
I 93
I 495
US 3
2
I 90
US 20
9
3
24
1
A

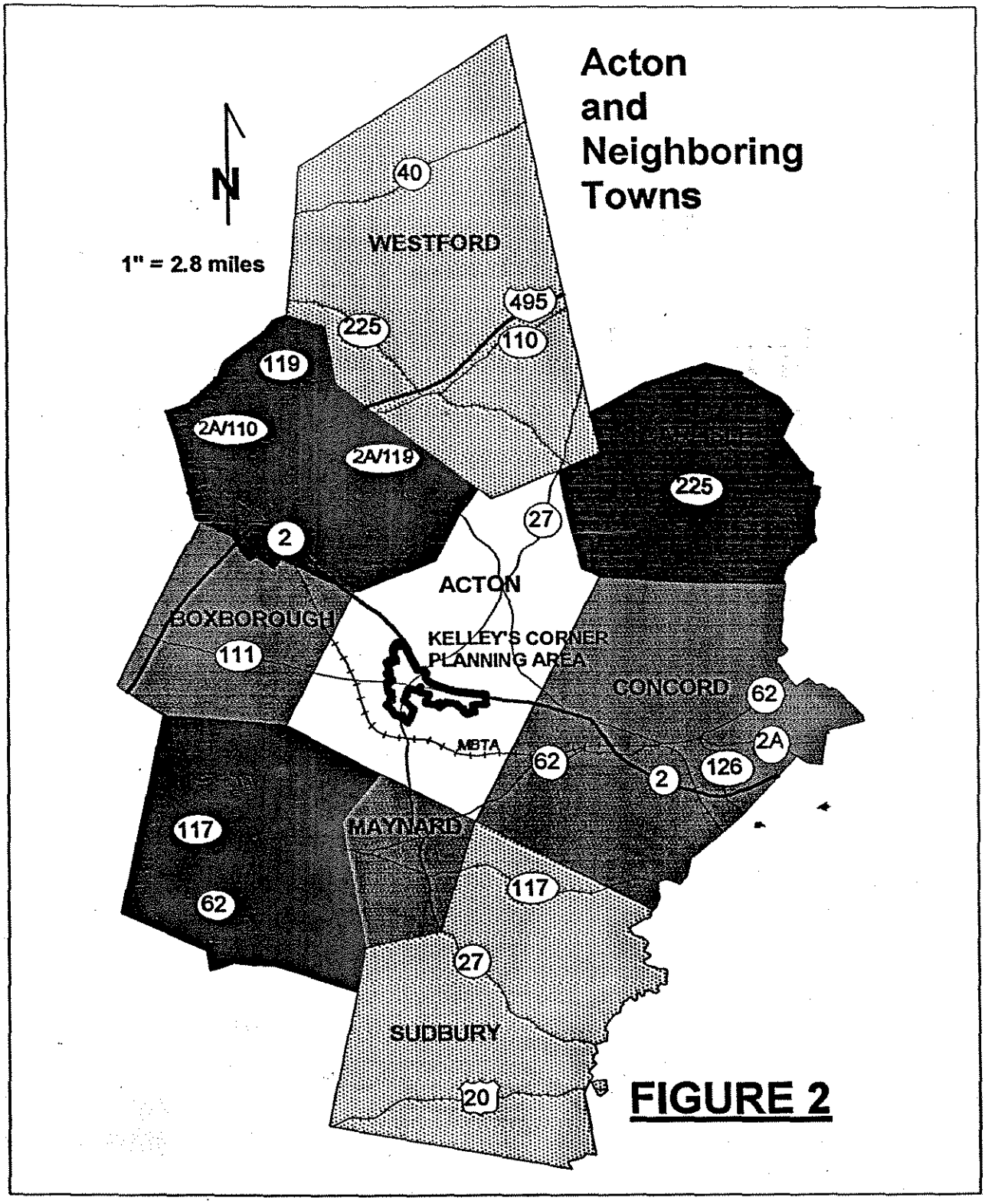

Acton
and
Neighboring
Towns
N
1" = 2.8 miles
WESTFORD
40
495
225
110
119
2A/110
2A/119
2
27
225
ACTON
BOXBOROUGH
111
KELLEY'S CORNER
PLANNING AREA
CONCORD
62
2A
MBTA
62
2
126
MAYNARD
117
62
117
27
SUDBURY
20

FIGURE 2

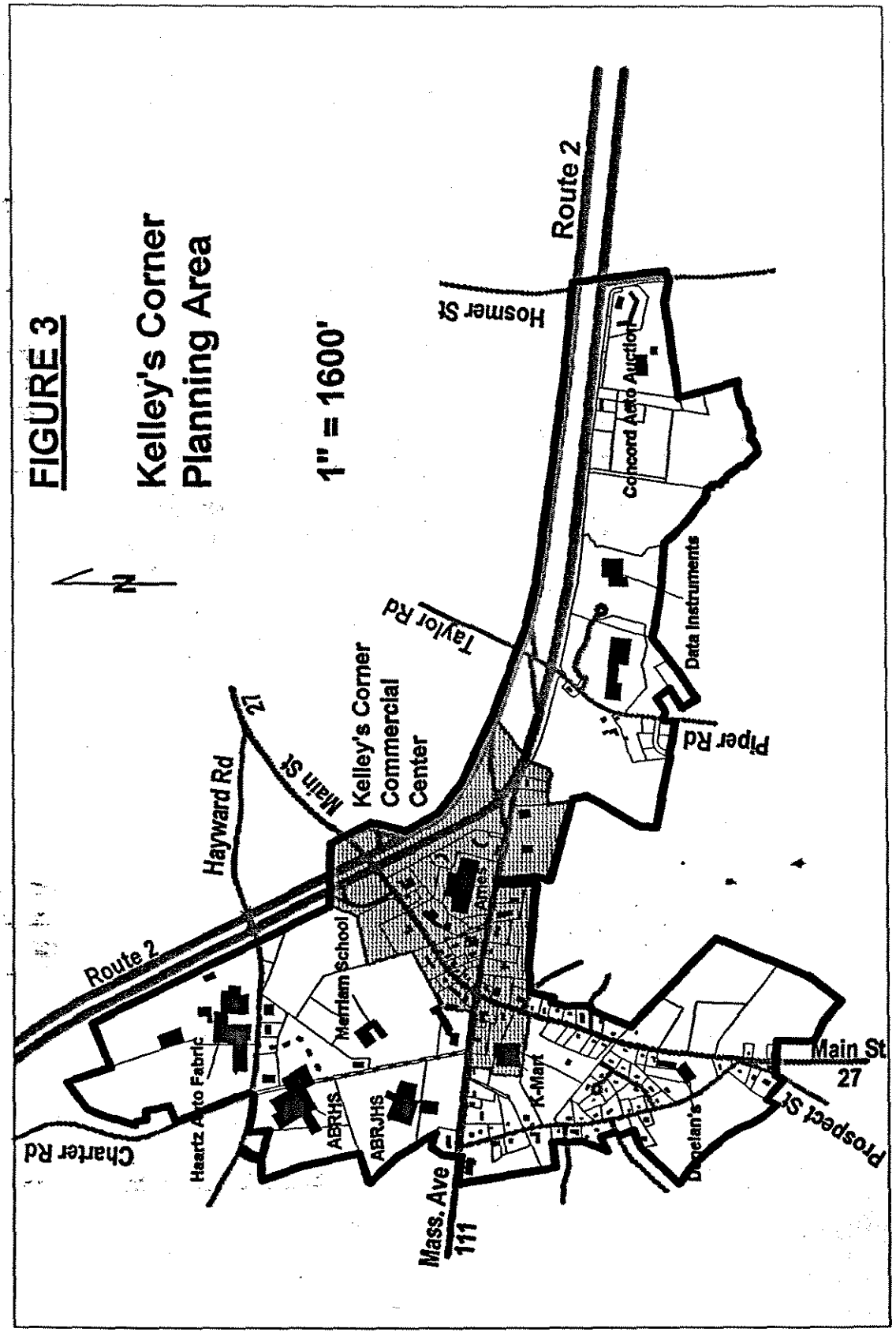


FIGURE 3
Kelley's Corner
Planning Area
1" = 1600'
N
Route 2
Hosmer St
Concord Auto Auction
Data Instruments
Taylor Rd
Piper Rd
Kelley's Corner
Commercial
Center
Main St
27
Hayward Rd
Route 2
Merriam School
Ames
K-Mart
Haartz Auto Fabric
ABRJHS
ABRJHS
Charter Rd
Mass. Ave
111
Main St
27
Prospect St

2. HISTORY AND BACKGROUND

Until the 1950's Kelley's Corner was just a country crossroad (1952 aerial photographs - Acton Engineering Department), although the Route 27/111 intersection was already signalized. Route 2 had just been completed. The suburban housing boom had not yet begun in earnest. The demand for shops, services and employment were not high enough to support another commercial center to compete with downtown Maynard and Concord, and the villages of West Acton and South Acton.

From the beginning of land use zoning in Acton in 1953, Kelley's Corner had been zoned for business uses. With suburban housing growth in the 1960's, business growth soon followed. Kelley's Corner developed into a contemporary suburban shopping and service area. But it is unique when compared to most other commercial areas that developed in the same period. Kelley's Corner has evolved into a commercial center with defined edges and boundaries, unlike the ubiquitous suburban 'strips' that stretch for miles along road sides. Although Kelley's Corner's structural appearance is contemporary, it's size and extent compares with the traditional town centers and villages of New England. This fact alone offers opportunities for future development that would not exist with a commercial 'strip'. It is usually easier and more cost effective to improve a center with needed infrastructure such as sewers, streets, parking and sidewalks.

The first Acton Master Plan of 1961 recommended Kelley's Corner as one of two 'main community business areas to serve the Town and surrounding communities'. The 1991 Master Plan resulted in significant zoning changes which direct future growth into growth centers of which Kelley's Corner is one. This current Master Plan identifies Kelley's Corner as 'the most appropriate area in Acton to locate businesses and retail stores with regional attraction'. It continues: "This is due to the area's close proximity to Route 2 as well as the Town's desire to protect the character of Acton's more historic village centers and to control further commercial strip development. The need exists to develop a plan for Kelley's Corner in order to develop solutions to current traffic and sewer problems, while ensuring the area's vitality and attractiveness as a regional business center." This Kelley's Corner Plan implements the Master Plan's recommendation.

The Kelley's Corner Planning Area is larger than the Kelley's Corner business center. It includes Kelley's Corner itself, the adjacent regional school campus, two nearby industrial areas and a small shopping center to the south, along with some residential neighborhoods and vacant parcels in the vicinity. These parts of the Planning Area are distinct entities from one another. Nevertheless, they relate to each other in many

ways through the people who live and work there or otherwise come into the area on foot or, more commonly, with their automobiles. In addition, the real possibility exists that one part might hold the solution to problems encountered in another part. For instance, the Kelley's Corner commercial center and the regional school facilities are in need for a sewer facility. There, soils are not well suited for on site septic systems causing inadequate or poor system performance, or sometimes failures. However, in the easterly part of the Planning Area soil qualities for subsurface wastewater disposal appear much more favorable. Looking at the area as one whole allows for better and more comprehensive planning toward a viable and lasting solution.

In addition, the Town has proposed the entire Planning Area for consideration as a Concentrated Development Center to the Metropolitan Area Planning Council (MAPC), the Boston regional planning agency. As part of the MAPC's MetroPlan 2000, areas designated as concentrated development centers would receive MAPC's priority recommendation for state and federal infrastructure investments.

3. LAND USES

Figure 4 shows the distribution of land uses in the Kelley's Corner Planning Area on a parcel basis. The core commercial center on the Main Street and Mass. Avenue intersection is generally referred to as Kelley's Corner. It has many retailers, a large collection of service enterprises and two residential condominium complexes shown as multi-family land use. To the west, between Mass. Avenue and Hayward Road is the school campus with the Acton Boxborough Regional High and Junior High Schools, the Merriam School, and the McCarthy Town School, shown as educational land use. North of the campus along Hayward Road, the Planning Area includes a commercial child care center and several industrial facilities.

To the east of Kelley's Corner, the Planning Area includes Route 2 with its signalized intersection at Piper and Taylor Roads, office and industrial facilities off Piper Road, and the auto auction site off Hosmer Street. The triangle south of Kelley's Corner, bounded by Mass. Avenue, Prospect Street and Main Street, is primarily in single-family residential use. At the south of the triangle is a smaller shopping center. The government land shown along Main Street across from this shopping center is in part Acton Water District land with a storage tank. The rest is part of the Great Hill Recreation Area. Several vacant parcels, a few large ones, are scattered throughout. Two religious institutions are also part of the mix. Figure 5 shows the proportionate shares of land uses based on land area of parcels.

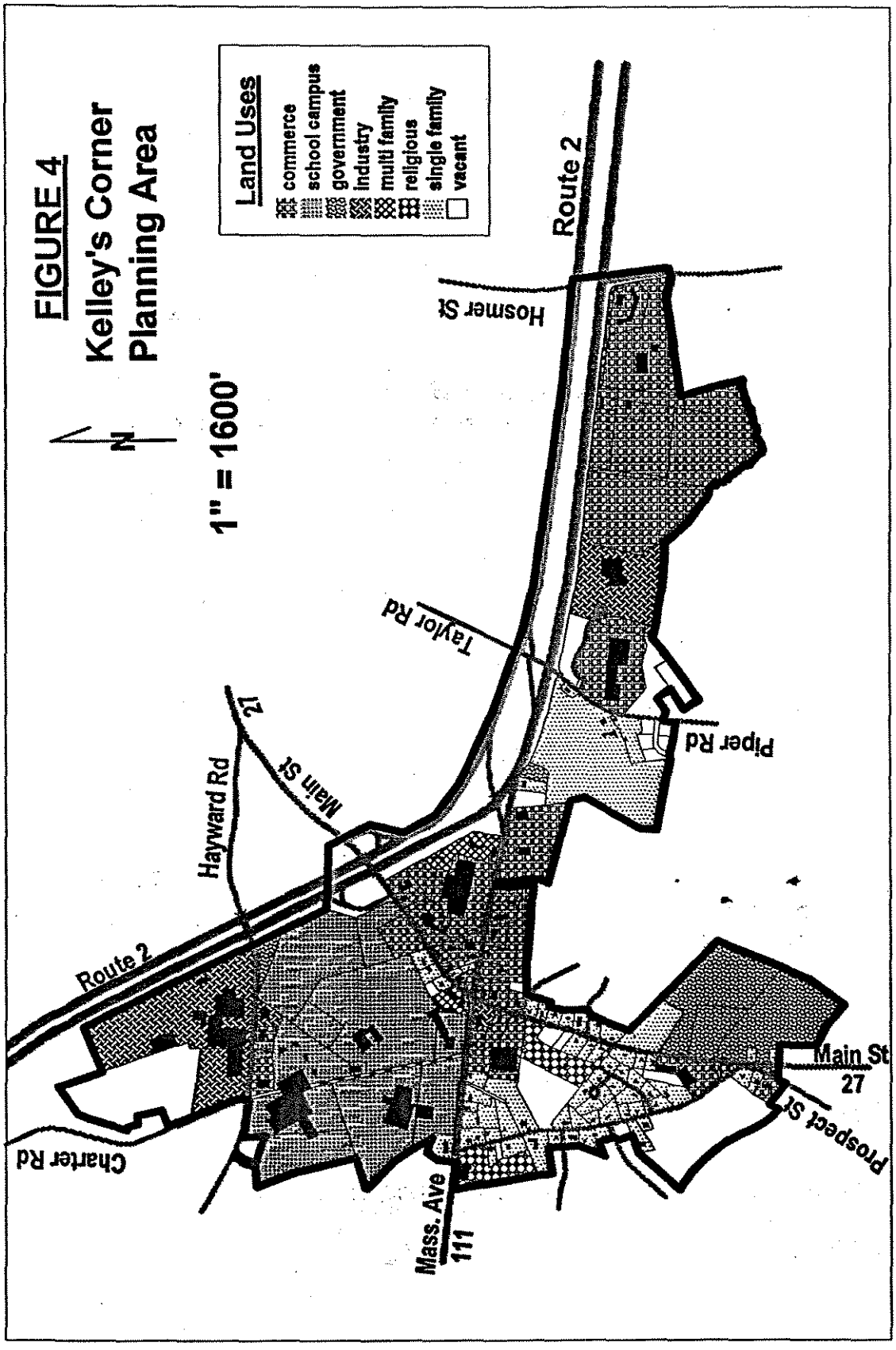
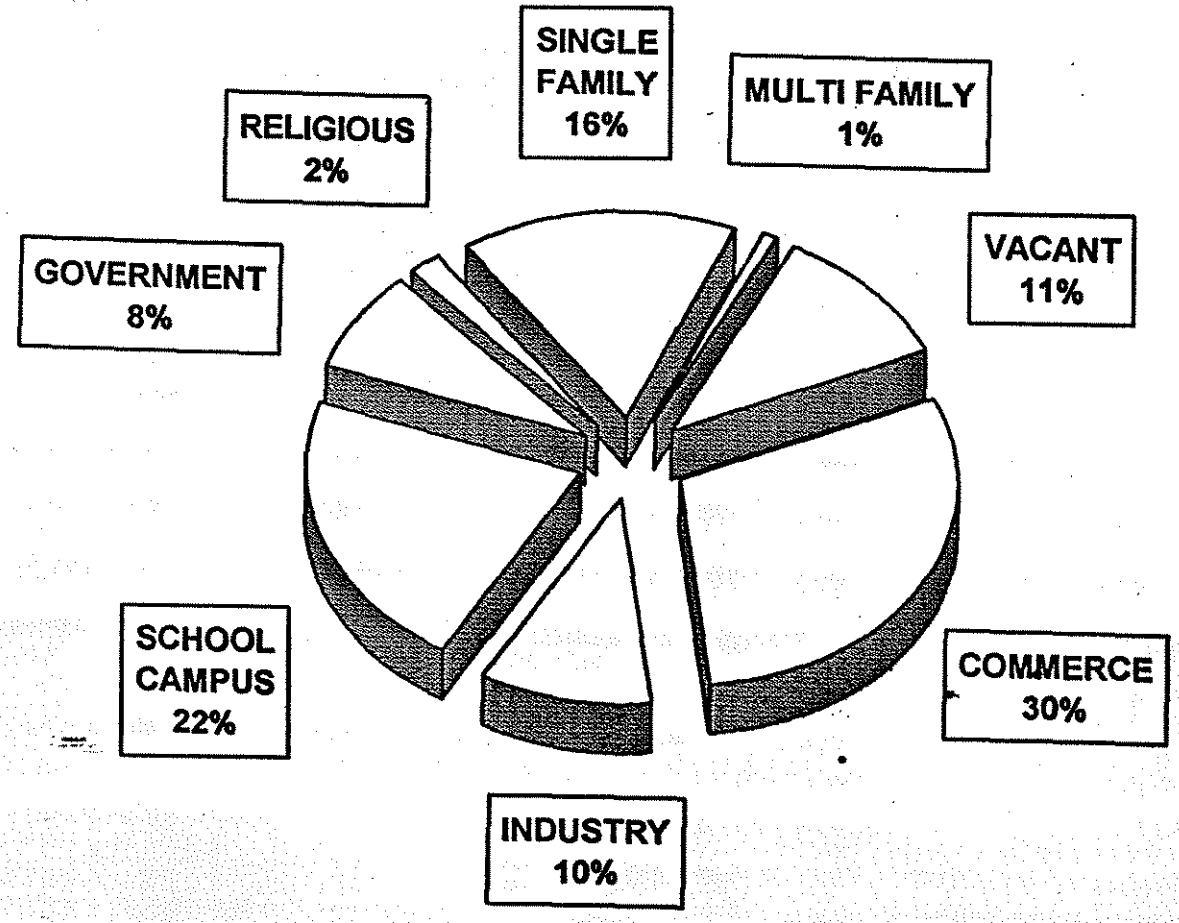


FIGURE 4
Kelley's Corner
Planning Area
N
1" = 1600'
Land Uses
commerce
school campus
government
industry
multi family
religious
single family
vacant
Route 2
Hosmer St
Taylor Rd
Piper Rd
Main St
27
Hayward Rd
Route 2
Charter Rd
Mass. Ave
111
Main St
27
Prospect St

KELLEY'S CORNER PLANNING AREA

PERCENTAGE OF LAND USES

(BASED ON ACREAGE OF PARCELS)



TOTAL AREA OF PARCELS: 477 acres

Figure 5

Table 1 summarizes information contained in the Acton Planning Department's parcel database concerning parcel size and development intensity for parcels developed for single-family, multi-family, commercial and industrial uses:[1]

- The typical, or *median* single-family residential parcel in the planning area contains about one-half acre of land. This is close to the minimum lot size for the Residence 2 zoning district, which governs most of the residential land in the planning area. The *mean* single-family parcel area (as contrasted with the *median*) is brought up by the inclusion of few large parcels, in particular, the 27-acre parcel at Piper Road and Route 2.
- The *median* area of industrial parcels in the study area is about 7.9 acres, compared to 1.2 acres of the commercial parcels.

Table 1

	Single-family	Multi-family	Commercial	Industrial
Parcels	63	2	29	4
Area (acres)	75.50	4.69	135.06	48.31
Parcel area: • Median	0.54	2.35	1.19	7.86
• Mean	1.20	2.35	4.66	12.08
Parcel area per dwelling unit:				
• Median	0.54	0.07		
• Mean	1.20	0.07		
Floor Area Ratio:				
• Median			0.12	0.23
• Mean			0.15	0.24

1 For the purpose of this report and to more accurately estimate build-out potential (see build-out analysis later in this report), the standard parcel list as used by the Town assessors was modified for the database used here, by 1) combining adjoining parcels in common ownership, and 2) splitting parcels along zoning and distinct land use boundaries.

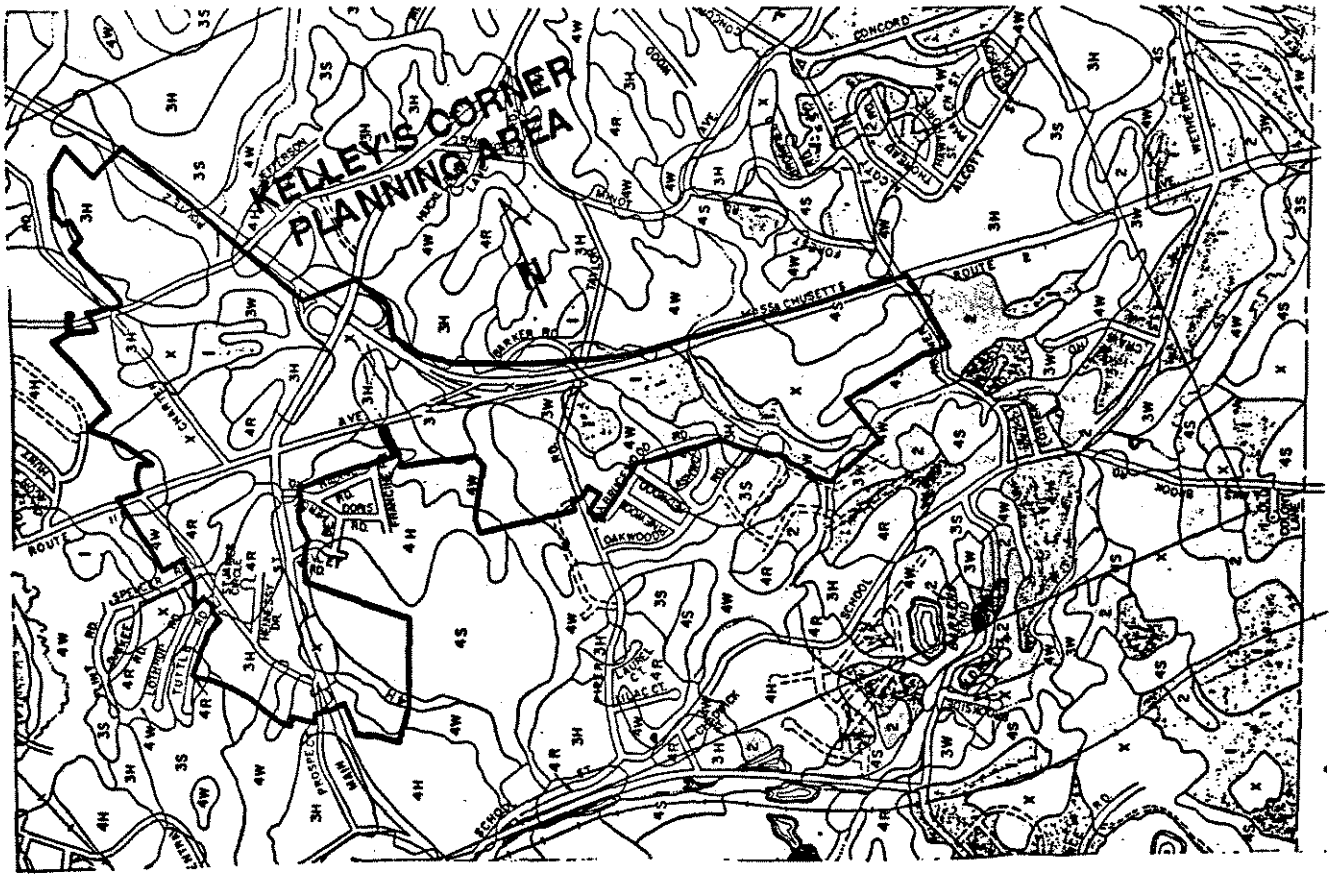
- In terms of floor area ratio (the ratio of total floor area to total parcel area = FAR), industrial parcels are about twice as dense as commercial parcels - the *median* FARs are 0.23 and 0.12, respectively. This results from the lower parking requirements of industrial uses, which permits more of the parcel area to be covered by buildings.

4. NATURAL RESOURCES REVIEW

Surface Geology and Soils, Topography:
The dominant geologic surface formation in the Kelley's Corner Planning Area, as in much of the rest of Acton, is ground moraine deposited by the glaciers during the last ice age. This material, also called non-stratified drift or glacial till, was deposited in broad but relatively thin sheets, and bedrock outcroppings are frequent (W. R. Hansen, Geology and Mineral Resources of the Hudson and Maynard Quadrangles, Massachusetts, Geological Survey Bulletin 1038, 1956; map by W.R. Hansen, 1948). Due to the unsorted composition of rock fragments of all sizes, pore volume within glacial till is typically very small. Its mineral surfaces are very adhesive and allow little movement of free water. Soils that evolved from this raw material have a high filter capacity, but very slow water infiltration or percolation rates. Therefore, this material is poorly suited for use in wastewater effluent absorption fields, which must have a certain minimum percolation rate to meet Massachusetts health and environmental regulations.

In parts of the easterly portion of the Planning Area the surface geology map shows the possibility of more suitable materials for subsurface wastewater disposal. There, sizable areas of stratified drift can be found. Stratified drift is generally more sorted gravel, sand and silt deposit from glacial out wash with a larger pore volume, lower filter capacity, but higher percolation rates. More of these deposits can be found east of the planning area near Route 2, School Street and Wetherbee Street, and in a few smaller pockets in and surrounding the Planning Area. Figure 6 shows areas where soils are probable to have a medium to high suitability for use for wastewater absorption fields. Note, that the area just west of Hosmer Street (now the auto auction) shows up as "not rated"(X) because at the time when the information for this map was collected this area was a sand & gravel pit without natural soils remaining. It is likely that this area still has sufficient material that is suitable for wastewater disposal.

The natural landscape throughout the Kelley's Corner Planning Area is gently rolling. Elevation differences are very modest. The high elevation of 246 feet above sea level is near the Junior High School, and the low point of 148 feet is in the east corner of the Planning Area near Hosmer Street (Figure 7).



LEGEND

DEGREE OF LIMITATION OF SUITABILITY
OF SOIL FOR SEWAGE EFFLUENT DISPOSAL

1	SLIGHT	4H	VERY SEVERE (HARDPAN)
2	MODERATE	4R	VERY SEVERE (BEDROCK)
3H	SEVERE (HARDPAN)	4S	VERY SEVERE (SLOPE)
3S	SEVERE (SLOPE)	4W	VERY SEVERE (WETNESS)
3W	SEVERE (WETNESS)	X	UNCLASSIFIED

SOURCE:
THIS MAP HAS BEEN DEVELOPED FROM INFORMATION AND MAPS CONTAINED IN A REPORT TITLED *"SOILS AND THEIR INTERPRETATIONS FOR VARIOUS LAND USES"* TOWN OF ACTON PREPARED BY THE U.S. SOIL CONSERVATION SERVICE AND THE MIDDLESEX SOIL CONSERVATION DISTRICT.

SEWERAGE STUDY COMMITTEE
TOWN OF ACTON, MASSACHUSETTS

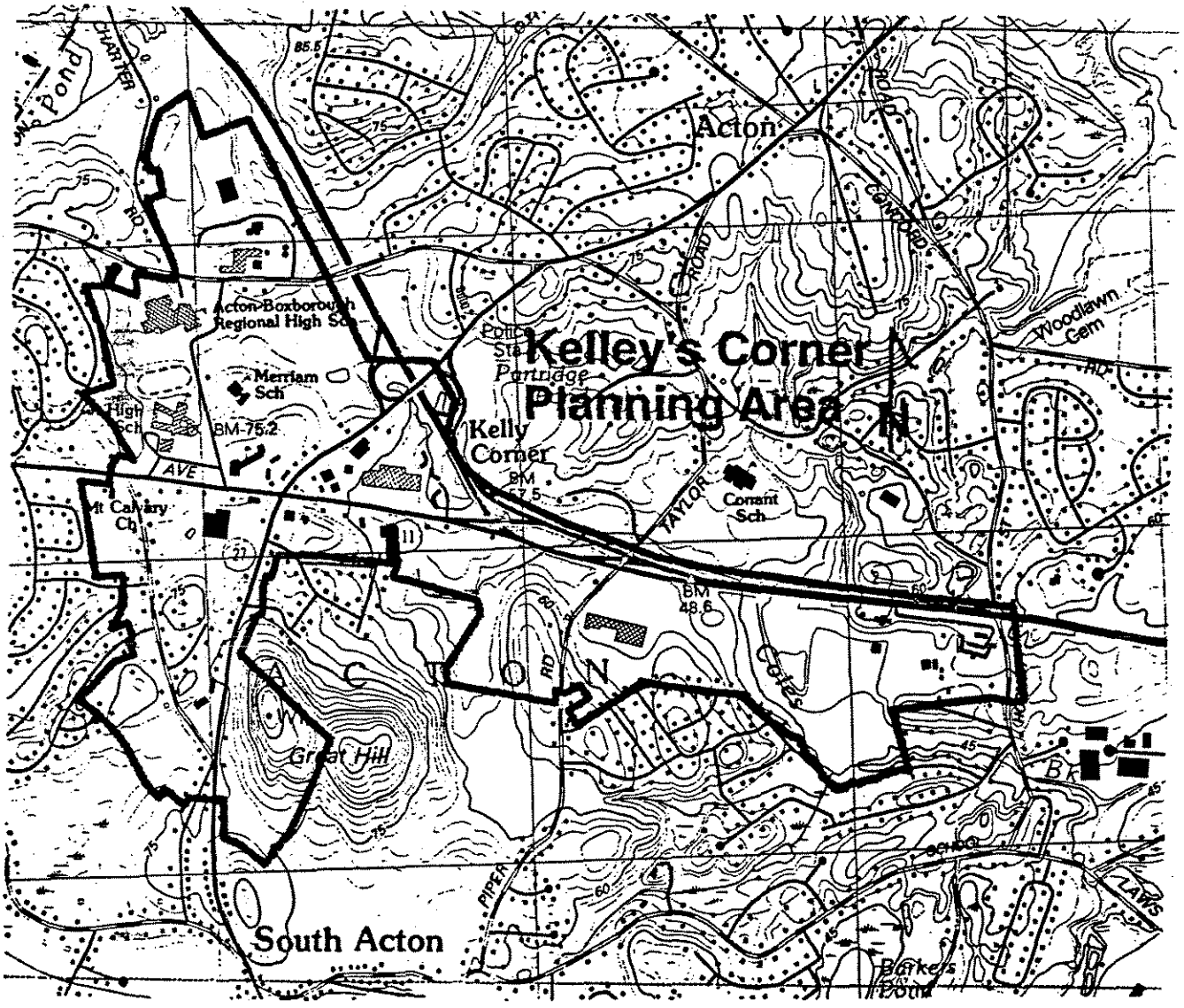
SUITABILITY OF SOILS FOR
SEWAGE EFFLUENT DISPOSAL

1000 0 1000 2000
SCALE IN FEET

MAY, 1966

METCALF & EDDY
ENGINEERS

FIGURE 6



United States Geological Survey Map
Maynard Quadrangle - 1987
(section enlarged)

FIGURE 7

Surface Water:
There are few surface water resources in the Kelley's Corner Planning Area. Wetlands and flood plains make up a moderate 11.6 percent of the total land area (Figure 8). Wetlands are protected from filling and construction under the Wetlands Protection Act and Acton Conservation Commission regulations. Flood plains are protected under the Acton Zoning Bylaw, which prohibits new construction in the Flood Plain zone. Areas within flood plains are subject to flooding at least once every 100 years.

Narrow wetlands in the western and central portion of the Planning Area form Cole's Brook, which meanders eastward along Route 2 and along the rear of parcels in the easterly portion of the Planning Area. A man made pond, named Clear View Pond, is also located in the easterly part. A flood plain is delineated along Cole's Brook, beginning at Mass. Avenue in the central portion of the Planning Area, then following the brook in an easterly direction.

Groundwater:
Acton's sole drinking water supply lies in shallow aquifers underneath the Town itself. That supply is limited although not immediately in danger of running out. Nevertheless, the Massachusetts Department of Environmental Protection has established maximum water withdrawal limits for all river basins in the State, and has issued maximum withdrawal limits for Acton at 1.83 mgd (million gallons per day annual average) for 1994-96, 1.92 mgd for 1996-2001, 1.93 mgd for 2001-06, and 1.94 mgd for 2006-11. Historic withdrawal rates have been as follows:

year	1980	81	82	83	84	85	86	87	88	89	90	91	92	93
mgd	1.44	1.38	1.48	1.69	1.68	1.59	1.53	N/A	1.59	1.46	1.50	1.44	1.73	1.79

Without greater conservation efforts, the continuation of the past trend will conflict with State regulatory limits by the end of the 1990s.

There are no public water supply wells in or near the Kelley's Corner Planning Area. The Town of Acton Zoning Bylaw establishes protection zones around public water supplies. Most of the Planning Area is in Zone 4 (Figure 9), which is farthest away from any well and where land use and development activities least affect the water supply quality. Only the easterly portion of the Planning Area is partially in Zone 3, which indicates sand and gravel deposits that connect with public water supplies. However, this portion is relatively distant from the wells and does not lie within the area of well draw-down. Compliance with existing zoning regulations will provide sufficient protection.

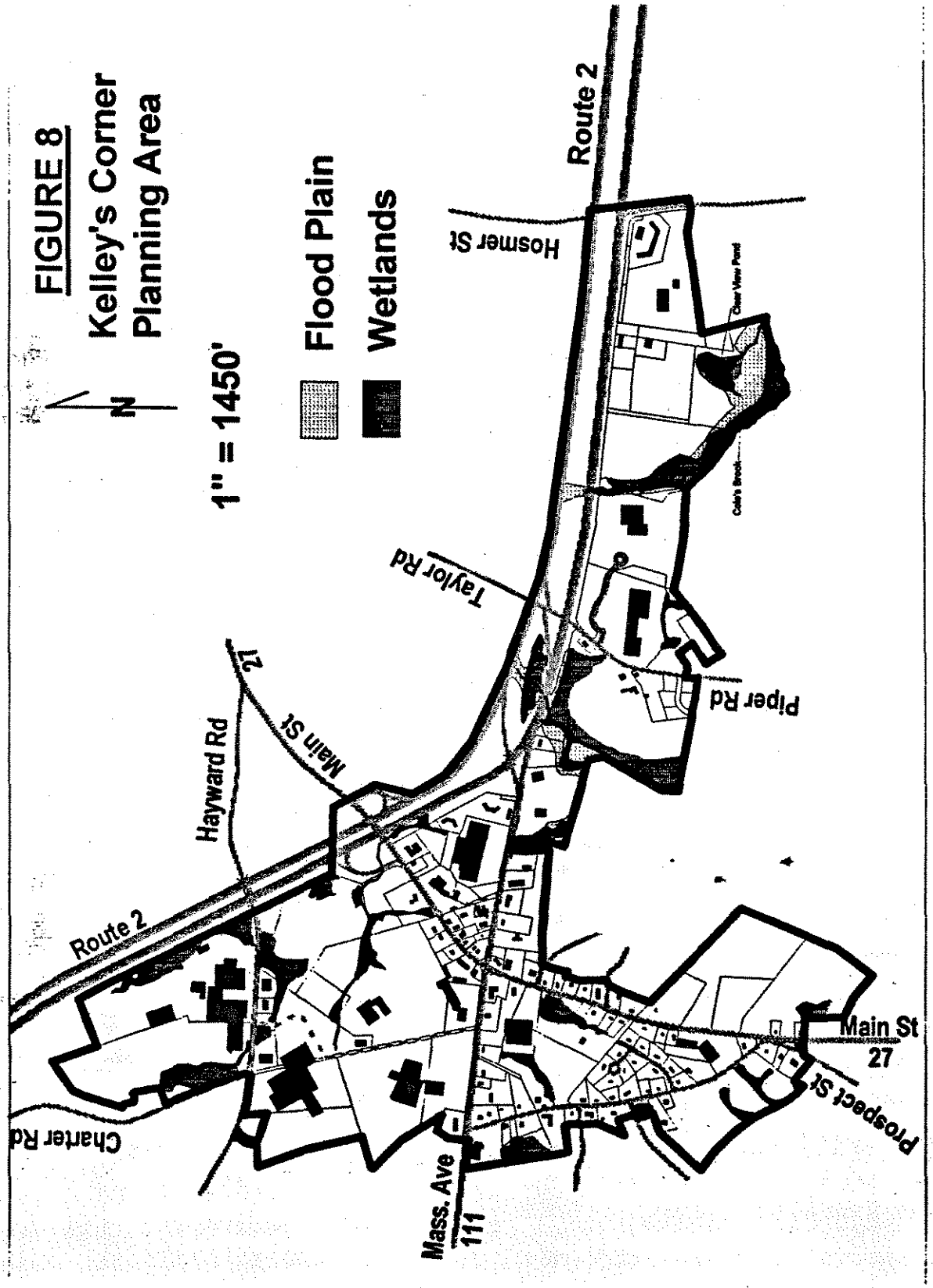


FIGURE 8
Kelley's Corner
Planning Area
N
1" = 1450'
Flood Plain
Wetlands
Route 2
Hosmer St
Taylor Rd
Piper Rd
Main St
27
Hayward Rd
Route 2
Charter Rd
Mass. Ave
111
Main St
27
Prospect St

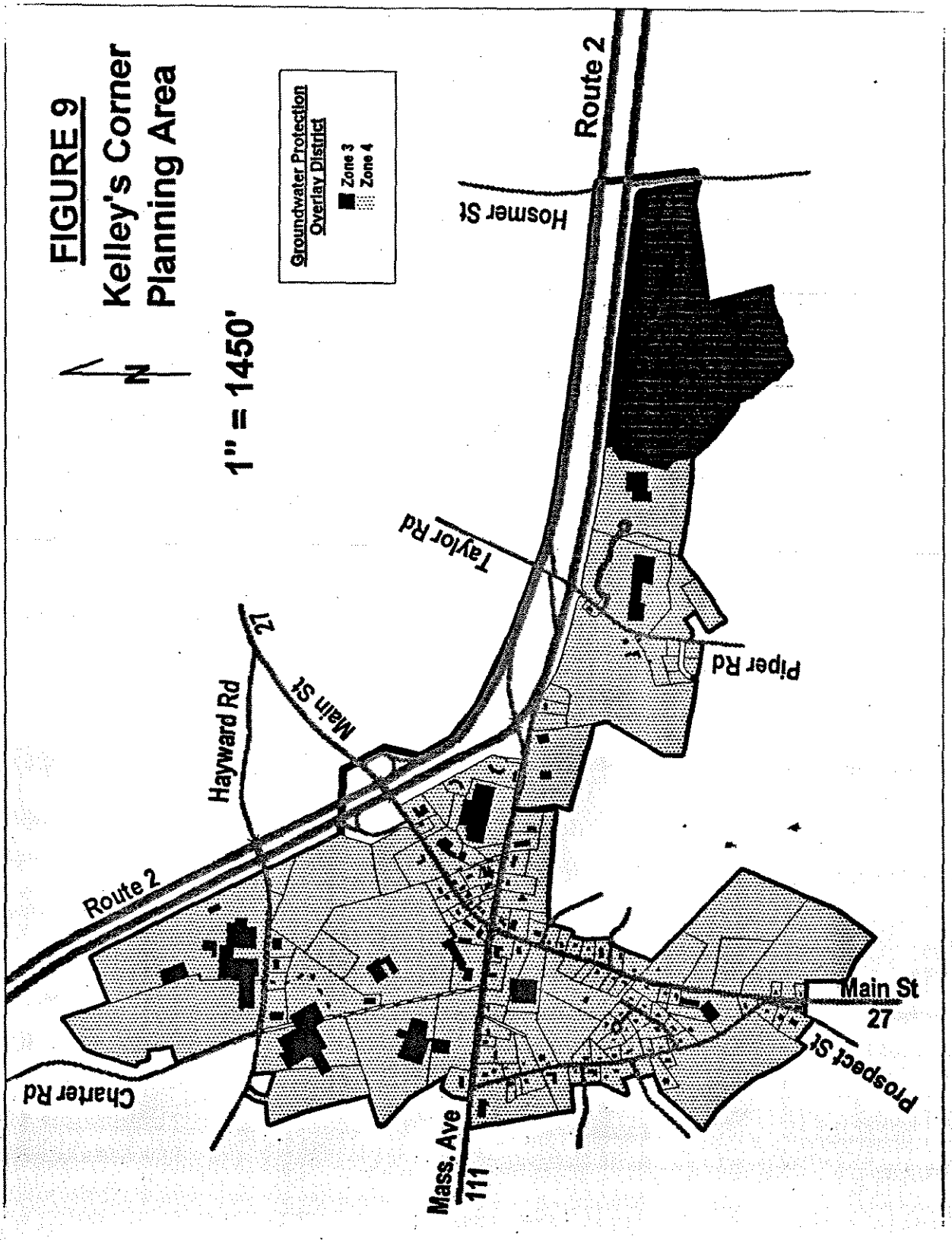


FIGURE 9
Kelley's Corner
Planning Area
N
1" = 1450'
Groundwater Protection
Overlay District
Zone 3
Zone 4
Route 2
Hosmer St
Taylor Rd
Piper Rd
Main St
27
Hayward Rd
Route 2
Charter Rd
Mass. Ave
111
Main St
27
Prospect St

5. TRAFFIC AND TRANSPORTATION

Street Links:

Table 2 shows traffic volumes and street capacities for major streets in the Kelley's Corner Planning Area reflecting 1989 conditions.

Table 2

	1989 AWDT[1] (vpd)[2]	Build-Out AWDT (vpd)	1989 week day AM peak	1989 week day AM v/c ratio[3]	1989 week day PM peak	1989 week day PM v/c ratio	Build-Out week day AM v/c ratio	Build-Out week day PM v/c ratio
Hayward Road (C)[4]	6100	13200	576	0.84	551	0.81	1.68	2.02
Hosmer Street (L)	900	2000	126	0.19	114	0.13	0.51	0.58
Main Street , 27 (A):								
north of Rt. 111	19600	24400	1488	0.88	1783	0.90	1.69	2.18
south of Rt. 111	17700	-	1449	-	1593	-	-	-
Mass. Ave., 111 (A):								
east of Rt. 27	14000	22200	868	0.57	1013	0.66	0.93	1.10
west of Rt. 27	13980	-	1029	-	1264	-	-	-
Piper Road (C)	3000	7800	292	0.44	396	0.59	1.23	1.43
Prospect Street (C)	2600	2900	246	0.38	294	0.44	0.41	0.47
Taylor Road (C)	2200	4000	261	0.38	291	0.41	0.92	1.01

1 Average Weekday Daily Traffic.

2 Vehicles per day.

3 Volume-to-capacity (v/c) ratio is based on estimated capacity at level of service (LOS) C for collector streets, and E for arterial streets. The v/c ratio is a measure of the degree to which traffic is using the street's available capacity. A v/c ratio below one means that the street is below full capacity; a v/c ratio of one means at full capacity; a v/c greater than one means over capacity.

4 (A) = Arterial Street; (C) = Collector Street; (L) = Local Street

The numbers in Table 2 for build-out conditions in Acton under current zoning limitations are estimates developed by Vanasse, Hangen, Brustlin, Inc. for the 1991 Acton Master Plan.

Table 3 shows additional information for Route 27 and Route 111 (Vanasse & Associates, Inc. for McDonalds Corporation, June 1994).

Table 3

	AWDT	Saturday	mid-day peak weekday	mid-day peak Saturday
Main St., 27 - south of R.111	14900	13800	1209	1441
Mass. Ave., 111 - west of R.27	11500	10600	907	1147

With respect to Route 2, the average daily traffic volume recorded in 1986 was 30980 vehicles (Massachusetts Highway Department (Mass. Highway), R.2 reconstruction plans Acton - Harvard, 1989). Mass. Highway estimates the average daily traffic volume to increase to 43870 vehicles by the year 2006.

Table 4 shows the peak hour traffic volumes were recently recorded on Route 2 by the Massachusetts Central Transportation Planning Staff (CTPS):

Table 4

		AM	PM
Between Piper/Taylor & Route 111 (1990)	eastbound	2021	1411
	westbound	1238	2700
Just west of the Concord Rotary (1992)	eastbound	1604	1252
	westbound	986	1966

Intersections:
Table 5 shows intersection data as available from the 1991 Master Plan for major intersections in the Planning Area.

Table 5

	Accidents/year (1984-87 average)	1989				Build-Out			
		LOS[1]		v/c ratio		LOS		v/c ratio	
		AM	PM	AM	PM	AM	PM	AM	PM
Signalized Intersections									
Routes 27 / 111	23 (20 in 1988)	E	E	1.00	1.00	F	F	-[2]	-
Piper / Taylor/Rt. 2	16	D	F	1.09	1.09	F	F	-	-
Unsignalized Intersections									
Rt. 2 eastbound ramp / Rt. 27	14 (combined)	F	F	-	-	F	F	-	-
Rt. 2 westbound ramp / Rt. 27		C	D	-	-	F	F	-	-
Prospect / Rt. 27	5	E	D	-	-	F	F	-	-
Prospect St. / Rt. 111	-	C	D	-	-	F	F	-	-
Routes 2 / 111	7	-	-	-	-	F	F	-	-

1 Level of service (LOS): Expression for degree of intersection congestion. LOS A represents very good operating conditions and no congestion. LOS F represents very poor or failing operating conditions. LOS E is generally considered acceptable for arterial street intersections in urban and suburban areas.

2 No data.

Table 6 shows additional information for the Route 27/111 intersection (Vanasse & Associates, Inc. for McDonalds Corporation, June 1994).

Table 6

	Mid-day peak hour			
	LOS		v/c ratio	
	weekday	Saturday	weekday	Saturday
Routes 27/111	B	B	0.71	0.89

Route 2:
With respect to Route 2 access, there are two distinct segments of the Planning Area with differing issues and opportunities:

- The easterly portion, from the Route 111 junction to Hosmer Street, has frontage and therefore visibility from Route 2. This creates the potential, and possibly increased development pressures, for uses with a regional orientation, ranging from hotel / conference center to office park to large-scale retail uses.

- In contrast, the central portion of the Planning Area is invisible from Route 2 itself, and land uses with a regional orientation, particularly retail uses, do not directly benefit from proximity to the highway. However, this area experiences existing traffic congestion problems relating to Route 2 access at peak hours.

Sidewalks:
Existing sidewalks do not connect well and are partially in disrepair. For the most part sidewalks are only on one side of the street. Separate pedestrian access is not available to many businesses. There are few convenient and safe sidewalk or walkway connection connecting the various parts of the Planning Area and connecting the Planning Area to surrounding neighborhoods. The Master Plan recommends sidewalks throughout Acton.

Bikeways:
Bikeways do not exist within the Planning Area.

Transit / Commuter Rail:
No public or private agency is offering regularly scheduled transportation services in Acton. Only the Council on Aging provides on demand transportation for the elderly. The South Acton commuter rail station is within one mile south of the Planning Area. This creates both opportunities and challenges:

Opportunities:

- The Fitchburg / South Acton commuter rail line provides a high level of regional service, with 16 inbound and 16 outbound trains stopping at the South Acton station each weekday, 8 trains each way on Saturdays, and 7 trains each way on Sundays. This is a tremendous resource for Acton residents, including those who live in the study area.

- Although there are no data, it is probable that train service does not currently play a major role in bringing employees to Acton. Nevertheless, the proximity of the station to Kelley's Corner should be considered as a potential transportation resource for certain types of land use activities (e.g., hotel conference center).

Challenges:

- Some of the peak hour traffic in Kelley's Corner and South Acton (including cut-through traffic on Prospect Street) may be attributable to the commuter rail station. This would increase with the expansion of rail service. On the other hand, development of a West Acton station, and, more importantly, of park and ride facilities further west along the Fitchburg line, could avoid or divert some of the traffic that currently arrives at South Acton from areas west of Acton.

Middlesex Bank Cut-Through:
The cut through at the Middlesex Bank from R.27 to R.111 is a private driveway, but it functions like a street. No volume and level of service information is available. This driveway should be evaluated along with all other street segments and intersections in the Planning Area.

Master Plan recommended improvements:
The following summarizes the recommendations in the 1991 Master Plan concerning improvements on the Kelley's Corner Planning Area streets and intersections. Some of these recommendations have changed as noted since the Master Plan was released. In some cases certain improvements were made, also as noted. In this Kelley's Corner

Plan, all recommendations need review, reevaluation, revision and supplements as appropriated.

Route 27	Widen for dedicated left turn lanes at street intersections and major driveways.
Routes 27/111	Widen intersection approaches for additional traffic lanes. In 1992, the signal timing device was adjusted resulting in an overall improvement during the AM peak hour from LOS E to LOS C (VHB, traffic signal evaluation, Kelley's Corner, 1991). An extra approach lane has also been installed on Route 111 eastbound.
Routes 2/27 ramps	At the westbound ramp intersection, widen Rt. 27 southbound for left turn lane to Rt. 2 westbound, or install lane pavement markings if wide enough. The Master Plan has also considered an alternate westbound on-ramp, but this recommendation was dismissed as unnecessary (Master Plan Coordinating Committee, 193). At the eastbound ramp intersection, install a signal to prevent back ups into the Route 2 main line, which was a problem. The signal timer adjustment at the Routes 27/111 intersection has largely eliminated back ups onto Route 2, but they do occur from time to time when the timer is out of order. A separate signal at the ramp is considered not necessary at this time (Master Plan Coordinating Committee, 1993).
Route 27/Prospect	Realign and consolidate two Prospect Street approaches to Route 27 to one intersection. In late 1991, the further investigation resulted in the following recommendation: Maintain the double intersection, but reconfigure to eliminate cut through from Prospect south to Prospect north, and install a signal at the southerly intersection (VHB, 1991).
Rt. 2/Piper/Taylor	At a minimum, upgrade signals and intersection configuration, some of which has been done. As a better solution, install a grade separated interchange.
Sidewalks	As part of a town wide recommendation for more sidewalks, the Master Plan recommends sidewalks along all streets within the Planning Area.

6. INFRASTRUCTURE

Besides the public streets, sidewalks, and the water supply system there are no other public infrastructure facilities within the Planning Area. A public wastewater collection system does not exist. Yankee Village at Town House Lane is serviced with a private package treatment plant. All other wastewater is disposed of via private on-site septic systems. Some systems are reported as inadequate or failing. Besides existing zoning limitations, the reliance on septic systems in poorly suitable soils is the most limiting factor on growth and redevelopment in most of the Planning Area.

7. CURRENT ZONING REGULATIONS - OVERVIEW

Figure 10 shows the current base-zoning districts in the Kelley's Corner Planning Area. The most controlling regulatory limit in the non-residential districts is the Floor Area Ratio (FAR) ceiling of 0.20. This means that the maximum building floor area on a lot cannot exceed 20% of the lot area. Building setback requirements, height limits and parking requirements also shape the physical appearance of the built environment. In the non-residential zoning districts of the Planning Area, the minimum building setback requirement from all lot lines is at least 30 feet. This results in a substantial distance of buildings from the street with car parking typically in the front. It also causes a wide separation of buildings from each other. The height limit is set at 36 feet, which allows up to three above ground stories. Parking lot design standards require extensive landscaping and screening. Note, that many existing buildings and commercial sites do not conform with the regulatory dimensional standards. However, substantial reconstruction and new construction must comply.

The maximum allowed residential densities in the residential districts are:

- R2: 1 dwelling unit/20000 square feet
- R8/4: 1 dwelling unit/40000 square feet
- RA: 5 dwelling units/acre (43560 square feet)

Table 7 summarizes the land use regulations of each zoning district in the Planning Area. It shows, by broad categories, the land uses that are generally allowed in a district.

Figure 11 shows the Affordable Housing Overlay Districts where the Zoning Bylaw allows higher housing densities in exchange for the provision of affordable housing. In the Affordable Housing Overlay District, the residential density may exceed the maximum density of the base zoning district if affordable housing units are part of the

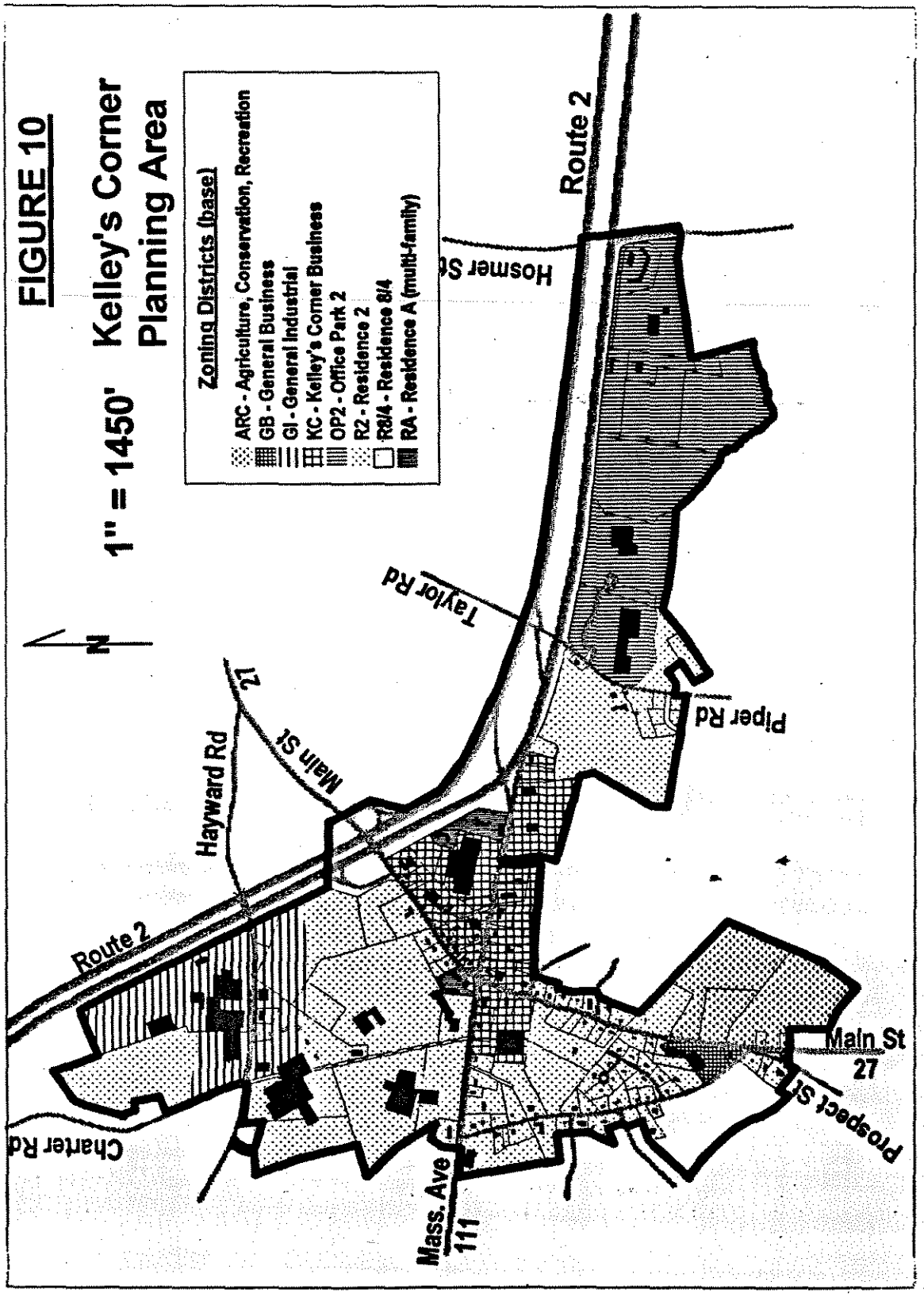


FIGURE 10
Kelley's Corner
Planning Area
1" = 1450'
N
Zoning Districts (base)
ARC - Agriculture, Conservation, Recreation
GB - General Business
GI - General Industrial
KC - Kelley's Corner Business
OP2 - Office Park 2
R2 - Residence 2
R8/4 - Residence 8/4
RA - Residence A (multi-family)
Route 2
Hosmer St
Taylor Rd
Piper Rd
Main St
27
Hayward Rd
Route 2
Charter Rd
Mass. Ave
111
Main St
27
Prospect St

Table 7[4]

Land Use	Zoning Districts							
	KC	GB	GI	OP2	R2	R8/4	RA	ARC
Single Family Residences	✓[1]	✓	n[2]	n	✓	✓	✓	n
Multi Family Residences	n	n	n	n	n	n	SP[3]	n
Retail	✓	✓	n	n	n	n	n	n
Services	✓	✓	n	n	n	n	n	n
Restaurants	SP	SP	n	n	n	n	n	n
Amusement/Entertainment	SP	SP	SP	n	n	n	n	n
Recreation (commercial)	SP	SP	SP	n	n	n	n	n
Motor Vehicle Sales/ Serv.	✓	✓	n	n	n	n	n	n
Professional Offices	✓	✓	n	✓	n	n	n	n
Governmental/Institutional	✓	✓	✓	✓	✓	✓	✓	✓
Warehouse	✓	✓	✓	n	n	n	n	n
Light Industry	SP	SP	✓	✓	n	n	n	n
Heavy Industry	n	n	n	n	n	n	n	n
Earth Removal/Mining	SP	SP	SP	SP	SP	SP	SP	SP

development. The maximum density in Sub-district A is 25% over the base maximum zoning density. In Sub-district B the maximum density is five units per acre. Also, refer to Figures 9 and 10 for Flood Plain and Ground Water Protection Overlay District boundaries, respectively.

1 Allowed use.

2 Use not allowed.

3 Special Permit required.

4 The Acton Zoning Bylaw has numerous use subcategories. This table is a summary only to show the emphasis of each district.

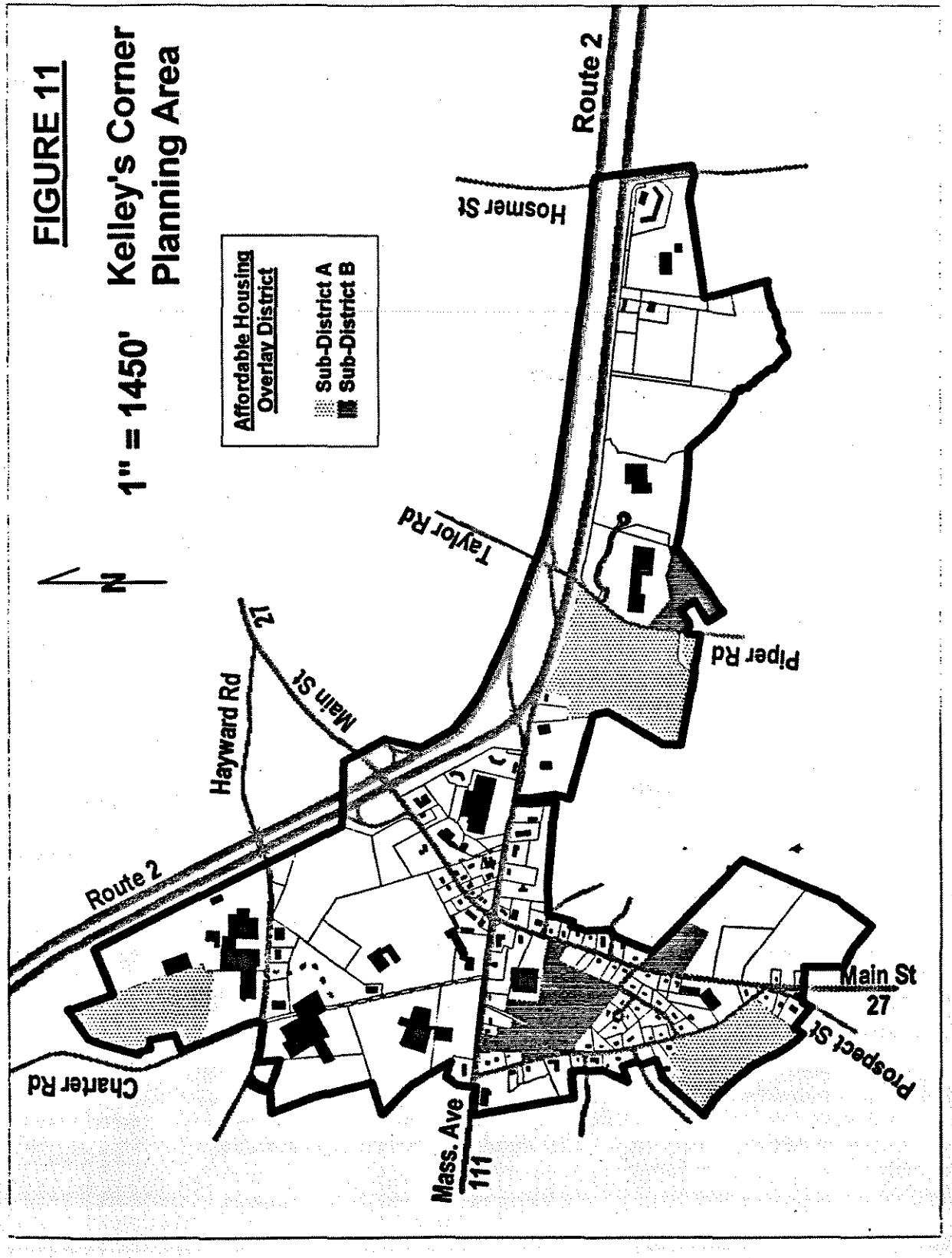


FIGURE 11
Kelley's Corner
Planning Area
1" = 1450'
Affordable Housing
Overlay District
Sub-District A
Sub-District B
N
Route 2
Hosmer St
Taylor Rd
Piper Rd
Main St
27
Hayward Rd
Route 2
Charter Rd
Mass. Ave
111
Prospect St
Main St
27

8. BUILD-OUT ANALYSIS

The location and amount of development that can occur in the Kelley's Corner Planning Area are determined by Acton's land use regulations and by physical constraints of the land itself. The build-out analysis was done to identify the maximum potential amount of development, or build-out potential, which is 'programmed' by the current zoning regulations while considering physical constraints such as wetlands and flood plains. It will also allow a prediction of how regulatory changes would affect this build-out potential. The assumption is that the planning area will build out to its maximum according to the existing or proposed land use regulations. In other words, the results of the analysis show the ultimate amount of development allowed under existing or proposed land use regulations. A build-out analysis is not a growth projection. It makes no prediction about the rate of growth and sets no time when the build-out condition will occur. Market factors, existing infrastructure limitations and similar factors that might be subject to change over time are not considered in the build-out analysis. For instance, in a strong suburban growth market where the rapid influx of people and capital encourages development and overcomes infrastructure limitations, such as the lack of a sewer collection system, build-out could occur quickly. In weaker markets, as they may be found in rural areas or inner city districts, build-out may occur only after a long time, or maybe never.

The build-out analysis for the Kelley's Corner Planning Area estimated the amount of total non-residential building floor space and the total number of residential dwelling units under build-out conditions. In the analysis it was assumed that the long term trend of development and changes of uses, where possible under zoning, will be toward a maximum in commercial development at the cost of existing residential housing stock. Only the basic land use regulations have been considered in the analysis. Discretionary variances or special permits could lead to somewhat different results.

Build-out estimates were done on all parcels located within the Planning Area. These 162 parcels represent[1] an area of approximately 477 acres not including streets. Of these, 421 acres are uplands outside wetlands or flood plains suitable for development.

---

[1] 162 parcels as shown in the Town Assessors list. For the purpose of this report and to more accurately estimate build-out potential (see build-out analysis later in this report), the standard parcel list as used by the Town assessors was modified for the database used here, by 1) combining adjoining parcels in common ownership, and 2) splitting parcels along zoning and distinct land use boundaries.

Figure 12 shows 1) the existing non-residential floor area compared with the potential total floor area under build-out conditions, and 2) the existing number of dwelling units and the potential total number of dwelling units under build-out, both times assuming current zoning regulations. The estimated non-residential building floor area can increase by about 40%, or 575,000 square feet above the current level. The number of dwelling units can increase by about 110%, or 146 units, above the existing number, not including the even higher potential under the affordable housing option.

The shown non-residential building floor area does not include the school buildings within the Planning Area. The total floor area of the school buildings is approximately 447,000 square feet, bringing the existing total to 1,452,000 square feet. No build-out figure was estimate for the school buildings. They are mostly located in residential districts. Therefore, zoning regulations, which affect the maximum floor area of other non-residential buildings, do not apply to them.

Figures 13 & 14 show that the potential for additional floor area and dwelling units is unevenly distributed over the Planning Area. For instance, the lion share of the potential additional non-residential floor area falls to the easterly portion of the Planning Area, east of the Route 2 and Piper Road / Taylor Road intersection, and very little floor area can be added south or west of the Kelley's Corner retail area.

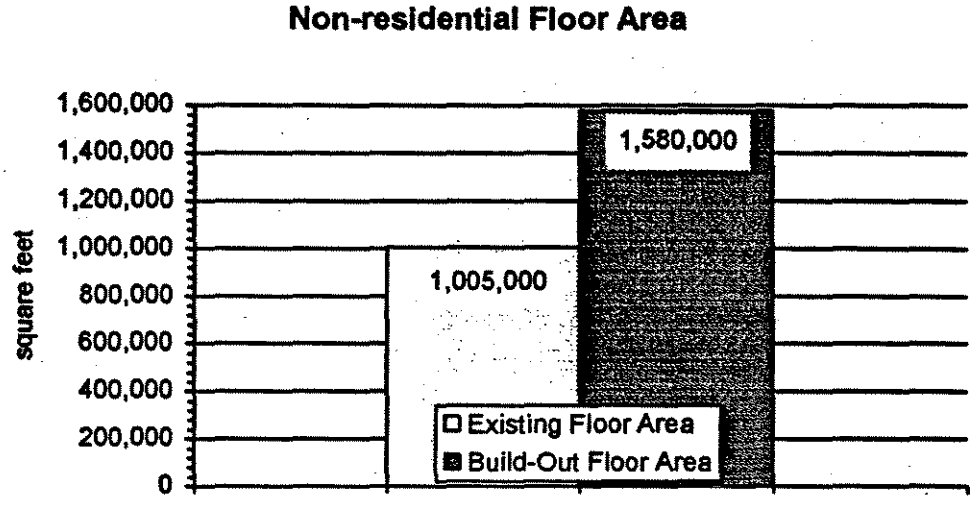
Additional noteworthy observations are as follows:

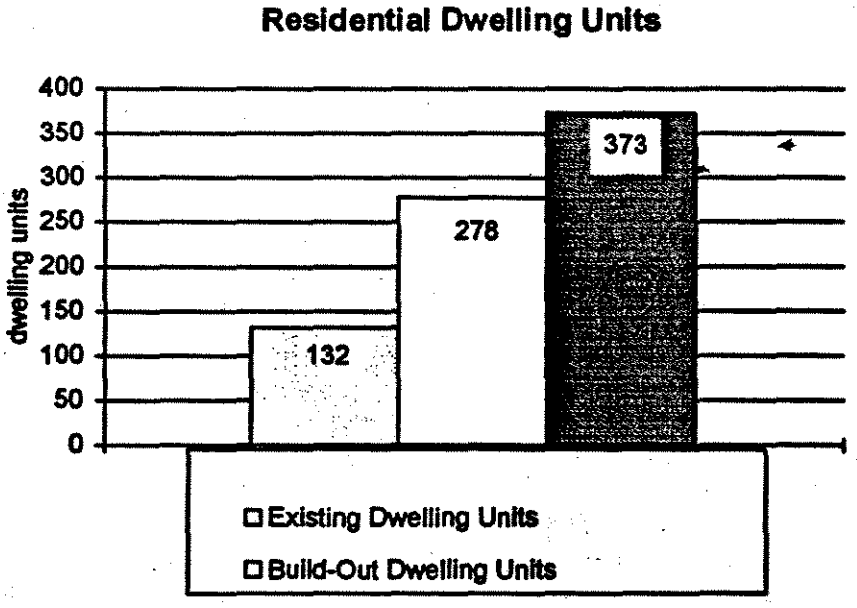
- Nearly two-thirds of the total additional non-residential floor area possible in the Planning Area (374,874 sq. ft. out of 574,833 sq. ft.) is represented by one group of parcels - the Auto Auction site. Thus, the future of Kelley's Corner can be influenced to a great degree by what happens at this location.

- In the central core, the estimated additional non-residential growth potential of 135,505 sq. ft. consists of small amounts of potential expansions on a number of commercial, residential and vacant parcels. Only two parcels have potential under current zoning for more than 10,000 sq. ft. of additional floor area, and one of these is a lot on the south side of Massachusetts Avenue that extends behind adjoining lots along the slopes of a hill. Its configuration and topography may limit its build-out further.

- None of the Planning Area's large retail properties - K-Mart, Acton Plaza (Ames), and Acton Shopping Center (Donelan's) - have any potential for expansion under current zoning. This is significant for two reasons. First, this limits the possibilities of a large development having a significant impact (positive or

Figure 12
Kelley's Corner Planning Area





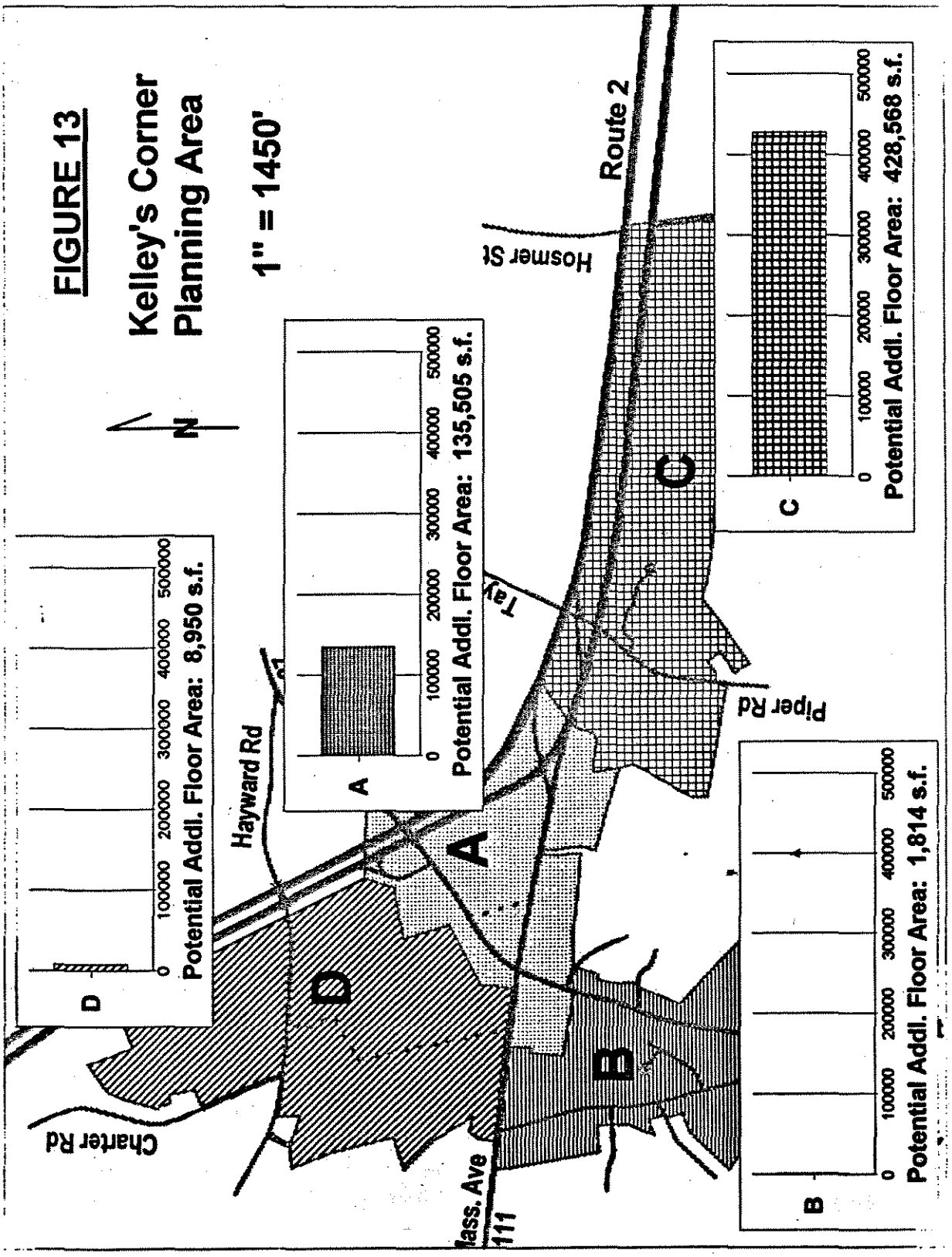


FIGURE 13
Kelley's Corner
Planning Area
1" = 1450'
N
Route 2
Hosmer St
Hayward Rd
Tay
Piper Rd
Charter Rd
Mass. Ave
111
A
B
C
D
Potential Addl. Floor Area: 135,505 s.f.
Potential Addl. Floor Area: 428,568 s.f.
Potential Addl. Floor Area: 1,814 s.f.
Potential Addl. Floor Area: 8,950 s.f.
0
100000
200000
300000
400000
500000

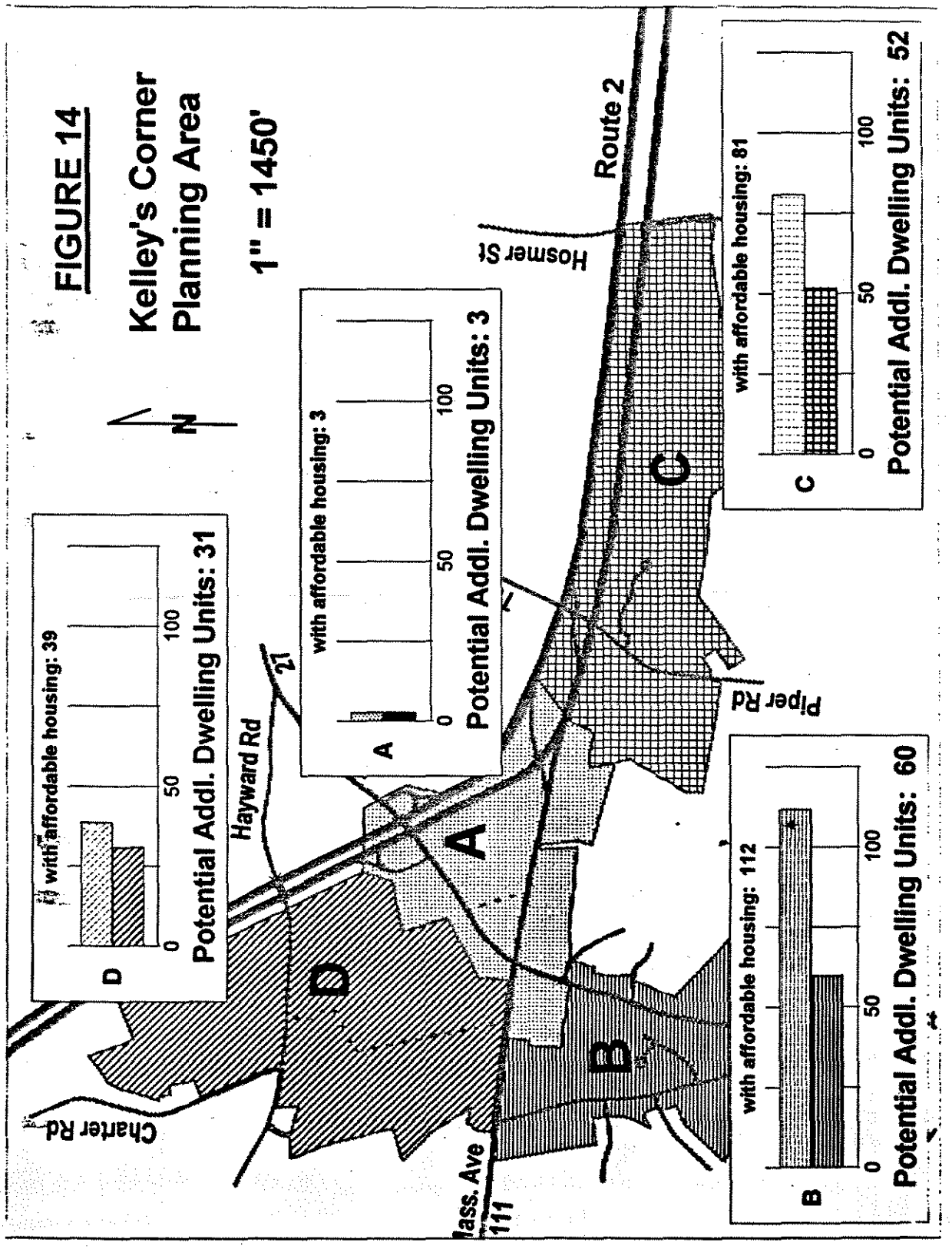


FIGURE 14
Kelley's Corner
Planning Area
1" = 1450'
N
Route 2
Hosmer St
Piper Rd
Hayward Rd
Charter Rd
Mass. Ave
111
21
A
B
C
D
with affordable housing: 3
Potential Addl. Dwelling Units: 3
with affordable housing: 81
Potential Addl. Dwelling Units: 52
with affordable housing: 112
Potential Addl. Dwelling Units: 60
with affordable housing: 39
Potential Addl. Dwelling Units: 31
0
50
100

negative) on the core retail area: in the absence of expansion potential there may be little incentive to redevelop a property - and thereby address existing problems. Second, the type of development that can occur under existing zoning will be small in scale, and it is more difficult to mitigate the impacts of this type of incremental growth.

- Looking at the Planning Area as a whole, the build-out figures suggest a shift in relative scale from the core area (Subarea A in Figure 14) to the Piper Road / Hosmer Street area (Subarea C). Currently, the ratio of non-residential floor area between these two portions of the Planning Area is 58:42, with the central retail core having 40% more floor area than the easterly subarea; at build-out this split will be reversed.

- The build-out estimates do not suggest any major changes in the future character of the Kelley's Corner Planning Area and the Town. Although build-out of the Auto Auction and neighboring parcels will impact this specific area, such development is likely to be consistent with other recent commercial and industrial development in the Town of Acton, given the zoning limitations (including the maximum floor area ratio of 0.20). In the core of the Planning Area - the triangle defined by Route 2, Main Street and Massachusetts Avenue, plus the area on the opposite south side of Massachusetts Avenue - development will be incremental and will not affect the existing pattern of development.

9. PROPERTY VALUATIONS

In 1994, property valuations assessed by the Town for residential, commercial and industrial parcels in the Kelley's Corner Planning Area were as shown in Table 8.

Town owned properties, religious properties and other tax exempt properties are not included.

Note the following observations:

- Residential valuations in the Planning Area appear to be somewhat below the town-wide average. According to the Town Assessors Office, the average value of a single family parcel in Acton in FY 1994 was $217,724, and the average property tax bill for single family homes was $3,886.

Table 8 - Assessed Valuation

	Single-family	Multi-family	Commercial	Industrial
Total valuation ($)[1]	10,499,800	4,086,300	28,503,800	7,428,070
Per acre:				
• Median	277,292	1,026,997	418,822	303,032
• Mean	280,964	1,026,997	420,534	304,362
Per dwelling unit:				
• Median	156,800	59,221		
• Mean	166,663	59,221		
Per square foot:				
• Median			67.59	32.66
• Mean			119.04	33.75

- Multifamily uses represent the highest valued land use in the Planning Area, measured in terms of assessed valuation per acre of land (median = $1,026,997 per acre).

- Commercial uses in the Planning Area have higher values than industrial uses measured in terms of assessed valuation per acre (median commercial = $418,822 v. median industrial = $303,032) as well as measured in terms of valuation per square foot (median commercial = $67.59, v. median industrial = $32.66).

- The per square foot valuations in the planning area compare to commercial / industrial lease rates as follows:

	Acton[2]	MAPC[3]
low end	$14 / sq. ft.	$18 / sq. ft.
high end	$18 / sq. ft.	$37 / sq. ft.

1 Total valuation of $52,129,970 includes $1,612,000 for vacant land.

2 Source: Carlson Real Estate, Acton.

3 Source: MAPC = Metropolitan Area Planning Council, the regional planning agency representing 101 Boston metropolitan area communities.

Comparative information on taxation in Acton and the communities of the MAGIC[1] Region is shown in Table 9[2].

Table 9

	Tax Levy	Assessed Valuation	Average Tax Rate	Residential Tax Rate	Open Space Tax Rate	Commercial / Industrial Tax Rate	% Comm./Ind. Rate : Residential Rate	% Levy/Valuation
Acton	$ 26,976,747	$ 1,446,312,102	$ 18.65	$ 18.29		$ 20.52	112 %	1.87 %
Bolton	$ 4,950,716	$ 323,153,755	$ 15.32	$ 15.32		$ 15.32	100 %	1.53 %
Boxborough	$ 5,894,230	$ 334,899,418	$ 17.60	$ 17.60		$ 17.60	100 %	1.76 %
Carlisle	$ 8,258,992	$ 514,899,693	$ 16.04	$ 16.04	$ 16.04	$ 16.04	100 %	1.60 %
Concord	$ 27,067,038	$ 1,853,888,132	$ 14.60	$ 14.49	$ 12.32	$ 15.62	108 %	1.46 %
Hudson	$ 17,589,467	$ 904,275,460	$ 19.45	$ 16.49		$ 29.57	179 %	1.95 %
Lincoln[3]	$ 9,943,520	$ 743,718,796	$ 13.37	$ 13.37		$ 13.37	100 %	1.34 %
Littleton	$ 9,258,559	$ 541,774,693	$ 17.59	$ 15.65		$ 23.04	147 %	1.71 %
Marlborough	$ 37,376,150	$ 901,568,712	$ 19.66	$ 15.88	$ 14.66	$ 30.69	193 %	1.97 %
Maynard	$ 10,836,959	$ 548,605,200	$ 19.75	$ 17.97	$ 17.97	$ 28.82	160 %	1.98 %
Stow	$ 7,513,120	$ 424,710,001	$ 17.69	$ 17.69		$ 17.69	100 %	1.77 %
Sudbury	$ 25,546,415	$ 564,006,300	$ 16.33	$ 15.68		$ 24.50	156 %	1.63 %
MAGIC Avg.			$ 17.17	$ 16.21		$ 21.07	130 %	1.72 %

1 MAGIC = Minuteman Advisory Group on Interlocal Coordination, a subregion of MAPC consisting of the following communities: Acton, Bolton, Boxborough, Carlisle, Concord, Hudson, Lincoln, Littleton, Marlborough, Maynard, Stow, Sudbury.

2 Source: Massachusetts Department of Revenue, FY 1995 Tax Report.

3 Numbers are from FY 1994

10. DEMOGRAPHIC REVIEW[1]

Different segments of Acton's population have different demands for services that might be provided in the Kelley's Corner Planning Area or elsewhere in Acton or the region. An understanding of the population characteristics and of future trends allows an evaluation of the adequacy of services currently available and a projection of future needs. This information can be used by the Town to provide more effective community services, and by businesses and industries to analyze market potentials for their services and products.

Population:

Population changes in a community occur through natural changes, births and deaths, and net migration, people moving in and out. Acton's population increase through the 1960s and 70s was largely due to in-migration (Acton Master Plan, 1991). Since 1980, the in-migration rate has slowed dramatic-ally; the same is true for the overall population increase. Table 10 shows changes in total population since 1970, and projected to the year 2020, for Acton and the eleven other MAGIC[2] communities

Table 11 shows the percentage population changes for Acton, the MAGIC communities and the entire MAPC region. Note that Acton, Bolton, Boxboro, Carlisle and Stow experienced significant growth in the 1970's. Note also that Acton, Bolton, Boxboro, Carlisle and Stow are predicted to continue to grow through the 1990's After 2000, it is predicted that the growth rate in Acton will slow, but Bolton, Boxboro, Carlisle and Stow will continue to grow at a rate that exceeds Acton over the next two decades. Demographers predict that the MAGIC Subregion will continue to grow over the next 25 years, but the larger MAPC region will experience an overall reduction in population over that same time period.

1 The data and information in this section has been provided by the Metropolitan Data Center, a division of the Metropolitan Area Planing Council (MAPC), serving 101 Boston metropolitan area communities including Acton, and is based on the 1990 U.S. Census.

2 MAGIC = Minuteman Advisory Group on Interlocal Coordination, consisting of the communities of Acton, Bolton, Boxborough, Carlisle, Concord, Hudson, Lincoln, Littleton, Marlborough, Maynard, Stow, Sudbury.

Table 10

POPULATION CHANGES AND PROJECTIONS[1]

(MAGIC Communities)

	1970	1980	1990	2000	2010	2020
Acton	**14,770**	**17,544**	**17,852**	**20,120**	**21,158**	**22,058**
Bolton	1,905	2,530	3,134	3,918	4,293	4,653
Boxboro	1,451	3,126	3,343	3,988	4,251	4,481
Carlisle	2,871	3,306	4,333	5,706	6,420	7,111
Concord	16,148	16,293	17,076	17,861	18,187	18,511
Hudson	16,084	16,408	17,233	18,989	19,478	19,861
Lincoln	7,567	7,098	7,666	8,320	8,632	8,938
Littleton	6,380	6,970	7,051	7,715	8,018	8,280
Marlboro	27,936	30,617	31,813	34,949	36,096	37,089
Maynard	9,710	9,590	10,325	11,010	11,139	11,239
Stow	3,984	5,144	5,328	6,113	6,455	6,752
Sudbury	13,506	14,027	14,328	15,665	16,197	16,629

1 U.S. Census; Metropolitan Data Center

Table 11

CHANGE IN TOTAL POPULATION[1]

	1970-1980	1980-1990	1990-2000	2000-2010	2010-2020
Acton	**19%**	**2%**	**13%**	**5%**	**4%**
Bolton	33%	24%	25%	10%	8%
Boxboro	115%	7%	19%	7%	5%
Carlisle	15%	31%	32%	13%	11%
Concord	1%	5%	5%	2%	2%
Hudson	2%	5%	10%	3%	2%
Lincoln	-6%	8%	9%	4%	4%
Littleton	9%	1%	9%	4%	3%
Maynard	-1%	8%	7%	1%	1%
Stow	29%	4%	15%	6%	5%
Sudbury	4%	2%	9%	3%	3%
MAGIC	**8%**	**5%**	**11%**	**4%**	**3%**
MAPC	**-4%**	**1%**	**1%**	**-1%**	**-1%**

Households:

Table 12 shows an 11% increase in the number of households in Acton between 1980 and 1990. The Table also reports that the composition of the households remained fairly consistent from one decade to the next, with the noted exception of a 4% increase in the number of single parent households with children. Table 10 shows that the average number of people living in Acton households has steadily decreased over the past two decades.

Table 12

HOUSEHOLD DEMOGRAPHICS[2]

	1980	1990
Single person households	1229 (20.7%)	1343 (20.4%)
Married couples with children	3808 (64.1%)	4166 (63.1%)
Single householder with children	415 (7%)	710 (11%)

1 U.S. Census; Metropolitan Data Center

2 U.S. Census

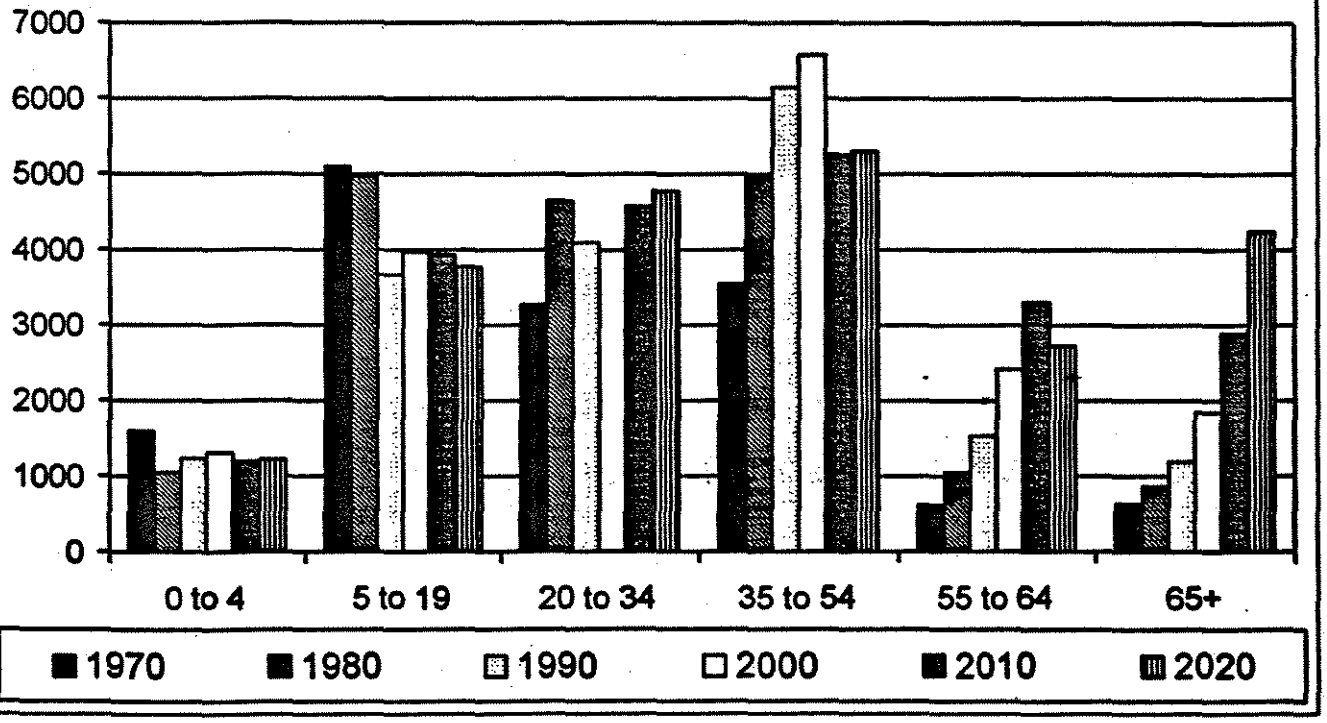
Table 13 **PERSONS per HOUSING UNIT[1]**

Year	Average # of Persons
1970	3.52
1980	2.78
1990	2.69

Age:

Figure 15[2] shows the past and projected composition of the Acton population by age groups. Note the projected sharp increases in the population segments of ages 55 to 64 and ages 65 and older toward the year 2000 and beyond. It is predicted that the younger age groups (0-4, 5-19) will remain steady over the next two decades.

Figure 15 **POPULATION FORECAST by AGE GROUP**



1 U.S. Census

2 U.S. Census; Metropolitan Data Center

Income:
Tables 14 & 15 show income statistics for households and persons living in Acton, and information on unemployment and poverty. Comparisons to the MAGIC area towns and the MAPC region are also included.

Table 14

ACTON HOUSEHOLD INCOME 1990[1]

ANNUAL INCOME	# OF HOUSEHOLDS
Less than $5,000	72
$5,000 to $9,999	213
$10,000 to $14,999	128
$15,000 to $24,999	553
$25,000 to $34,999	703
$35,000 to $49,999	995
$50,000 to $74,999	1,405
$75,000 to $99,999	1,152
$100,000 to $149,999	1,060
$150,000 or more	313
Median Household Income	**$61,394**

Table 15

EMPLOYMENT, INCOME, and POVERTY DATA[2]

	Acton 1970	Acton 1980	Acton 1990	MAGIC 1990	MAPC 1990
Median Household Income	$15,210	$27,323	$61,394	$54,233	$40,775
Per Capita Income	$4,207	$10,522	$25,792	$24,664	$19,577
Unemployment Rate	5.1%	4.1%	3.55%	%	%
Poverty Level	$10,647	$19,126	$42,976	$37,963	$28,543
Persons under 18 below Poverty	1%	1.5%	3.34%	3.93%	11.70%
Person 65+ below Poverty	<1%	<1%	4.14%	8.10%	9.35%

1 1990 U.S. Census
2 U.S. Census; poverty level for Acton based on Federal defintion

11. ECONOMIC OVERVIEW[1]

Tables 16 and 17 show the occupations of Acton's residents and the level of educational attainment.

Table 16

OCCUPATIONS of ACTON RESIDENTS, 1990[2]

Job Description	# Employed	Percentage
Executive, Administrative, Managerial	2,741	27%
Professional Specialty	2,719	27%
Technicians & Related support	541	5%
Sales	1,281	13%
Administrative Support, incl. clerical	1,243	12%
Private household	16	>1%
Protective Service	52	>1%
Service, not protective & household	640	6%
Farming, forestry, fishing	44	>1%
Precision prod., craft, repair	580	6%
Machine operators, assemblers. inspect.	188	2%
Transportation & material moving	72	>1%
Handlers, equip. cleaners, helpers, laborers	85	>1%
Total # of Employed Persons Age 16+	**10,202**	

1 The data and information in this section has been provided by the Metropolitan Data Center, a division of the Metropolitan Area Planing Council (MAPC), serving 101 Boston metropolitan area communities including Acton, and is primarily based on the 1990 U.S. Census.

2 1990 U.S. Census

Table 17

EDUCATIONAL ATTAINMENT, 1990[1]

Education Level	# of Persons	Percentage
Less than 9th Grade	186	1.5%
9th to 12th Grade, No Diploma	408	3%
High School Graduate	1,671	14%
Some College, No Degree	1,674	14%
Associate Degree	880	7%
Bachelor's Degree	4,057	34%
Graduate or Professional Degree	2,994	25%

Table 18 shows the availability of automobiles in Acton's households. Clearly, automobiles are readily available with over 50% of the households using two or more vehicles.

Table 18

VEHICLES AVAILABLE per ACTON HOUSEHOLD, 1990[2]

OCCUPIED HOUSING UNITS	6,600	Percentage
No vehicle	221	3%
One vehicle	1,843	28%
Two vehicles	3,326	50%
Three or more	1,210	18%

Figures 16, 17 and 18 report where Acton residents work, the mode of transportation used by Acton residents to travel to work, and where the people who work in Acton live. 61% of Acton residents work in Acton or the MetroWest area. This is a major factor in determining the mean "commute to work" time of 25.28 minutes. However, almost 40% of Acton's working population (3,908 people) travel long distances to work and 78% of

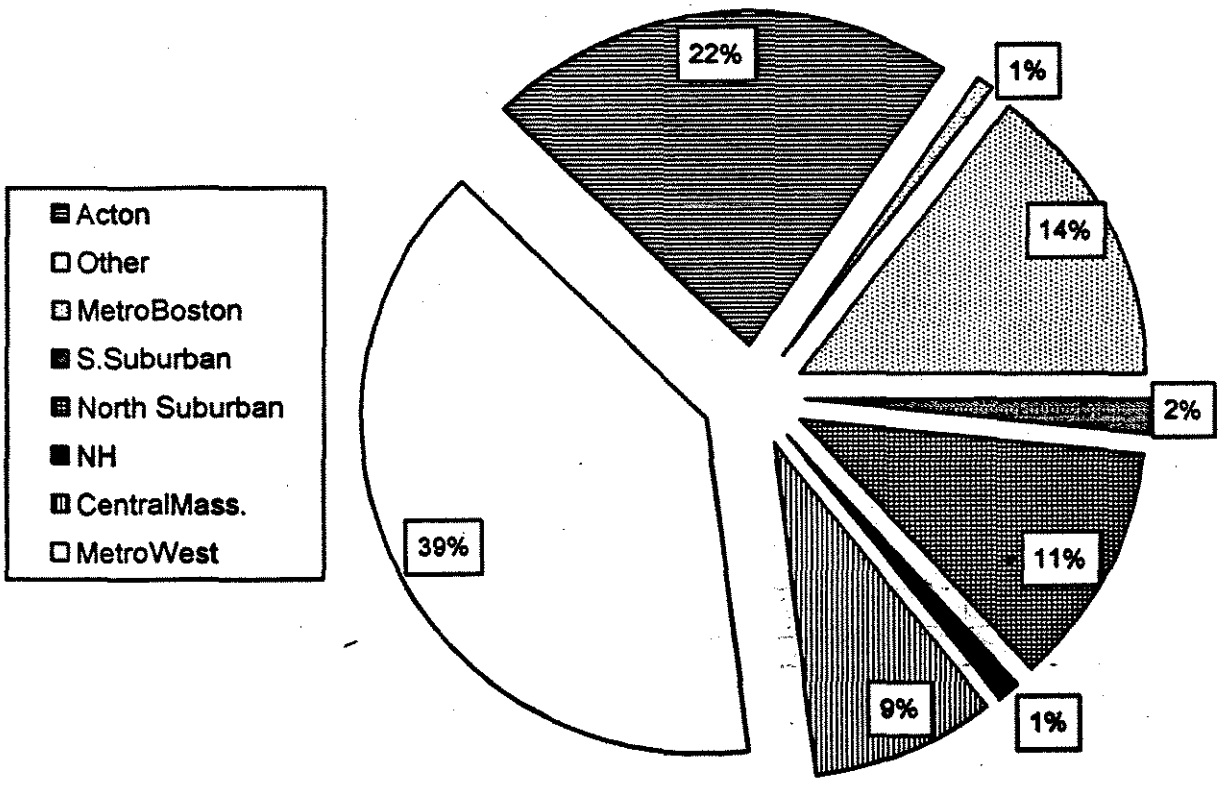
1 1990 U.S. Census; Acton Residents over age 25

2 1990 U. S. Census

the people who work in Acton (7,536 people) live out of town. The commuting habits of Acton residents and the residence of people who work in Acton are major contributors to the congestion experienced in the AM and PM peak commuting hours.

Figure 16

WHERE ACTON RESIDENTS WORK[1]



1 1990 U.S. Census

Figure 17

PRIMARY METHOD OF TRAVELING TO WORK[1]

(Acton Residents)

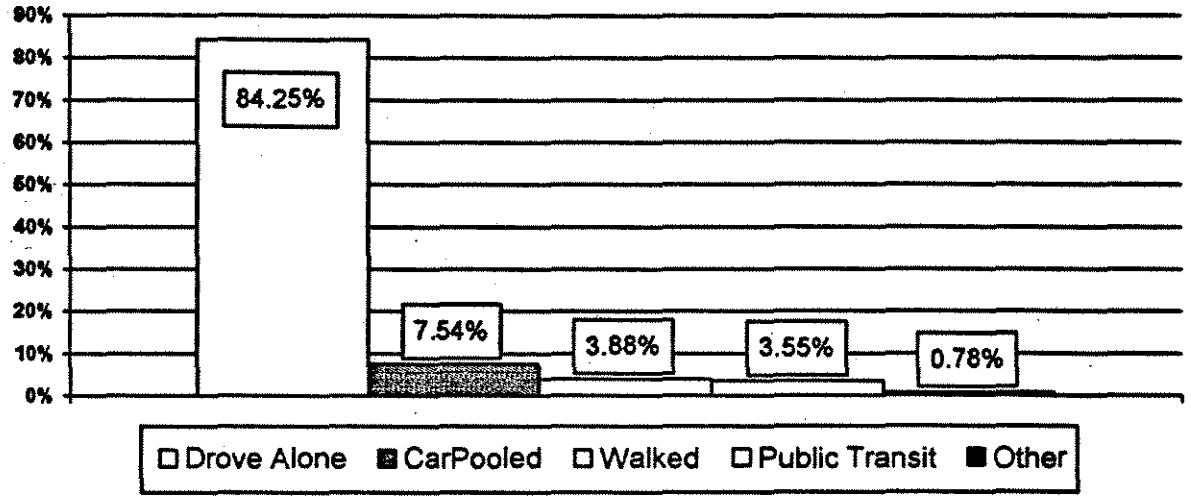


Table 19 lists the largest private employers in the Town of Acton for the year 1993. Note that four of the listed companies are located in the Planning Area.

Table 20 shows the numbers of persons employed for the year 1990 in each of the MAGIC communities, and forecasts of employment figures to the year 2020. As of 1990, Acton is the fourth largest employment center in the MAGIC region with 9,500 persons employed within the Town. By the year 2020, it is predicted that Acton's place in the MAGIC region will be number two, with 15,100 person employed. This is a 58.9% increase. This compares to a projected population increase of 23.6% in the same time period (see Table 10).

1 1990 U.S. Census

Figure 18 **RESIDENCE of ACTON WORKERS[1]**

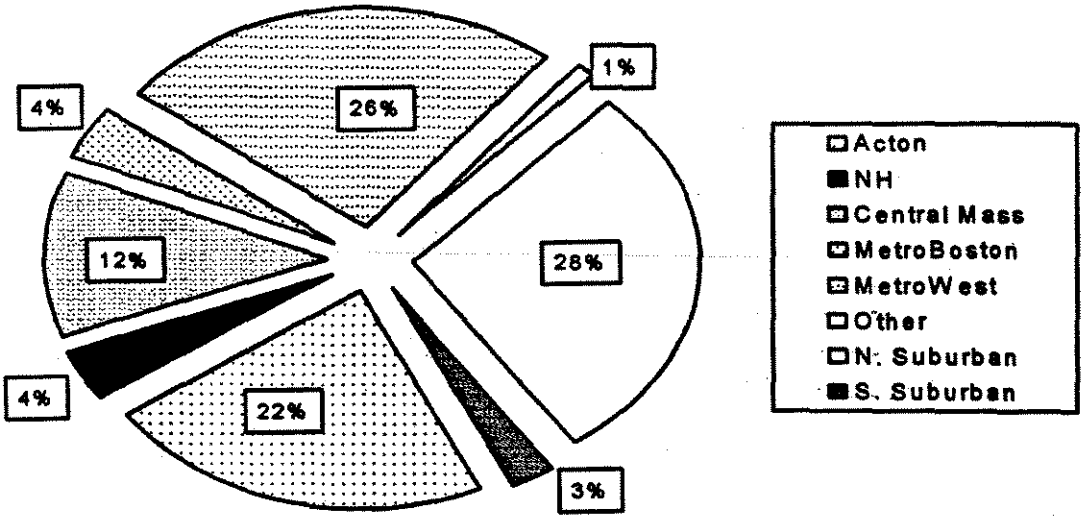


Table 19

1993 LARGEST EMPLOYERS in ACTON[2]

EMPLOYER	BUSINESS	EMPLOYEES
DIGITAL EQUIPMENT CORP.	COMPUTERS	1,230
ENSR	ENVIRONMENTAL	330
BEACON PUBLISHING CO.[3]	PRINTING	280
◊DATA INSTRUMENTS	MANUFACTURING	240
◊HAARTZ AUTO FABRIC	SYNTHETICS	210
W.R. GRACE/DEWEY & ALMY	CHEMICAL PROCESSING	180
LAU TECHNOLOGIES	ELECTRONIC COMPONENTS	171
SETRA SYSTEMS, INC.	ELECTRONIC COMPONENTS	105
AMERICA HOME TOY PARTIES, INC.	CATERERS	100
◊ACTON MEDICAL ASSOC.	HEALTH SERVICES	80
◊MODULAR	COMPUTERS	66

◊ Employers in the Kelley's Corner Planning Area

1 1990 U.S. Census
2 Non-government employers; the public schools in the Planning Area employ 287 persons (1995)
3 Recently relocated to Concord

Table 20

COMMUNITY EMPLOYMENT FORECASTS[1]

COMMUNITY	1990	2000	2010	2020	% CHANGE
ACTON	**9,500**	**11,300**	**14,000**	**15,100**	**58.9**
BOLTON	1,500	1,700	1,900	2,000	33.3
BOXBORO	2,300	3,900	5,300	6,000	160.9
CARLISLE	700	700	900	800	14.3
CONCORD	11,800	14,200	15,400	14,800	25.4
HUDSON	8,500	10,100	12,300	13,000	52.9
LINCOLN	1,700	1,900	2,000	2,100	23.5
LITTLETON	5,400	6,200	7,800	8,500	57.4
MARLBORO	20,800	28,400	34,900	32,800	57.7
MAYNARD	7,500	7,700	7,900	8,200	9.3
STOW	2,300	2,600	3,000	3,200	39.1
SUDBURY	9,800	9,900	11,600	12,100	23.5
MAGIC TOTAL	**81,800**	**98,600**	**117,000**	**118,600**	**45**
MAPC TOTAL	**1,715,630**	**1,870,040**	**2,019,640**	**1,979,250**	**15.4**

Table 21 shows the vacant commercial and industrial sites within the MAGIC Subregion of MAPC. As you can see from the table, Marlboro, Boxboro, and Hudson have the largest number of vacant sites within MAGIC. Since all three of these communities also have good access to major highways, they provide serious competition to Acton in its efforts to attract commerce and industry.

1 1990 U.S. Census, Metropolitan Data Center

Table 21

VACANT SITE SURVEY[1]

1/27/94

TOWN	SITES	ACRES	COMMERCIAL	INDUSTRIAL	ASSESSED VALUE
ACTON	**12**	**203**	**1**	**11**	**$13,240,700**
BOXBORO	24	650	16	8	$10,723,600
CONCORD	5	147	2	3	$8,813,400
HUDSON	17	421	2	15	6,292,930
LITTLETON	10	264	1	9	$10,142,600
MARLBORO	39	1086	5	34	$55,935,800
MAYNARD	2	67	0	2	$1,990,480
STOW	8	342	4	4	$3,837,680.
SUDBURY	4	33	2	2	$1,050,200

12. PLANNING AREA BUSINESS SURVEY

In January and February 1995, the Kelley's Corner Planning Committee conducted a survey of all known businesses located within the Planning Area. Of the 68 businesses that were contacted, 64 responded to the survey.

The survey was mailed to business managers, owners and business operators as appropriate. Committee members followed up with telephone calls.

Table 22 shows the number of businesses that responded, grouped by business categories, and information on employment.[2]

1 Metropolitan Data Center, 1994

2 The survey did not include the Schools. See part 13 for figures on the schools.

Table 22

BUSINESS SURVEY

Business Categories and Employment

Category	Businesses in Category	Full Time Employees	Part Time Employees	Total Employees, (and % of total below)	Acton Resident Employees (% of total employees in previous column)
Retail	8	144	103	247 (14%)	74 (30%)
Restaurant/ Deli	6	23	90	113 (6%)	43 (38%)
Health Services	6	90	46	136 (8%)	41 (30%)
Financial Services	6	32	13	45 (3%)	10 (22%)
Automotive Services	5	15	25	40 (2%)	14 (35%)
Manufacturing	4	619	32	651 (36%)	27 (4%)
Real Estate Services	4	8	46	54 (3%)	26 (48%)
Child Care Services	3	40	12	52 (3%)	6 (12%)
Auto Sales[1]	1	81	250	331 (18%)	27 (8%)
Other	21	85	45	130 (7%)	28 (22%)
Total	64	1137	662	1799	296 (16%)

1 ADESA (Concord Auto Auction), ADESA is scheduled to relocate to Framingham in early 1995.

The 64 responding businesses employ 1,799 persons within the planning area, 1,137 as full time employees. This represents almost 19% of the 9,500 jobs reported in Acton for the year 1990, and 16% of the 11,300 town wide jobs projected for the year 2000. In terms of employment, manufacturing is by far the largest sector in the Planning Area with 651 employees, most of them full time. It is noteworthy that this sector employs the smallest percentage of employees who reside in Acton (4%). The manufacturing sector is made up of four companies: All Metal Fabricators, Data Instruments, Haartz Auto Fabrics, and Modular. Modular is a recent start-up firm. The next largest sector, measured by employment, is retail with 247 employees. The Concord Auto Auction reports a total labor force of 331 persons, but it plans to relocate in early 1995. Other large employment categories are Health Services and Restaurants.

The survey also indicates:

- 44 (69%) of the businesses responding to the survey have their headquarters in the Planning Area.
- 35 (55%) of the respondents foresee growth of their operations in the Planning Area. Only four respondents (6%) expect a decline.
- The median time for which companies have been located in the Planning Area is 15 years. Ten businesses have been located in the Planning Area for over 30 years, twelve are newcomers with a tenure in the Planning Area of two years or less. Six of the responding businesses have current plans to relocate.

13. THE SCHOOL CAMPUS

The school campus is the only major public facility in the Kelley's Corner Planning Area. The campus is home of the Acton Boxborough Regional High and Junior High Schools, and the Merriam and McCarthy Town Schools which house an elementary school and special education programs. The four school buildings have a combined building floor area of approximately 447,000 square feet providing 125 class rooms, two auditoriums, an indoor swimming pool, four gymnasiums, and related facilities. There are also extensive outdoor recreation and sports facilities.

The following data is current as of January 1995.

Current Student Population:

High School	1285
Junior High School	642
McCarthy Town	457
Merriam	250
Total	2634

Professionals currently employed:

High School	131
Junior High School	70
McCarthy Town	52
Merriam	34
Total	287

200 of the professional staff are employed full time, the rest is part time. The Community Education Program currently draws an additional 2210 students. It is staffed by 210 teachers.